



MAGAZINE

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THE I.C.I. MAGAZINE

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The *I.C.I. Magazine* is published for the interest of all who work in I.C.I., and its contents are contributed largely by people in I.C.I. It is edited by Richard Keane and printed at The Kynoch Press, Birmingham, and is published every month by Imperial Chemical Industries Limited, 26 Dover Street, London, W.1. Telephone: REGent 5067-8. The editor is glad to consider articles for publication, and payment will be made for those accepted.

CONTENTS

The Story of I.C.I. Australia and New Zealand	66
I.C.I. News	70
Strip Rolling Copper	77
Painting Your Own Home, by J. N. T. Adcock	82
Textiles Old and New, by David Traill	85
Information Notes No. 60	88
The Irish in England, by Kevin Fitzgerald	93

Front Cover: The breakdown of ammonia liquor bulk supply at Kentish Town Depot—filling Winchester quarts. A camera study by C. R. Wormald.

OUR CONTRIBUTORS

J. N. T. ADCOCK writes on *Painting Your Own Home* from the angle of one who has done the job himself. Moreover his practical experience is sharpened by the expert technical knowledge that goes with his job as Assistant Development Manager at Paints Division headquarters. Last year he visited the United States as leader of a specialist team on metal finishing, sent by the Anglo-American Council on Productivity.

KEVIN FITZGERALD writes on *the Irish in England*—a sequel to his *English in Ireland*—with the unerring touch of one who knows both the Celtic and the Anglo-Saxon mind. He returned from our Dublin office last August to join Central Agricultural Control, where he specialises in propaganda.

DAVID TRAILL is the man who has been in charge of the development of 'Ardil' from the beginning. Throughout his I.C.I. career he has devoted his energies almost entirely to research and since 1948 has been on the Nobel Division board. He is a graduate of the universities of St. Andrews and Durham. During the first world war he served in the R.N.V.R. His interests, he tells us, are artistic—nosng round junk shops and collecting Chinese porcelain and eighteenth-century furniture.

The Story of I.C.I. AUS and NEW Z

The chemical industry of Australia may be said to date from the turn of the century. Today practically the whole range of complex modern chemicals is produced locally. The story of this rapid development by a vigorous people is told below.

AUSTRALIA is a nation of just over eight million people of predominantly British stock scattered over a continent which stretches from the tropics well into the cold southern seas; a people who still refer nostalgically to this country as "home" but who have superimposed on their basic British characteristics a dynamic conception of life which is peculiarly their own. What Australians have done to the leisurely old English game of cricket is proof of this, if proof were needed. But perhaps the best testimony to their restless energy is seen in the miracles of development which have been achieved since Governor Phillip, the first military governor of New South Wales, landed with his party of convicts and soldiers at Sydney Cove in 1788. A little over 150 years is a short time in which to build an independent and politically mature nation, exploiting the vast possibilities of a continent of 2,974,581 square miles and enjoying the amenities of modern industrial development and all that goes with it.

And now the pace is quickening. The policy of the Australian authorities since the war is to bring in immigrants in large numbers, sufficient at present to double the natural increase of the Australian population. Hand in hand with this increase in population goes accelerated industrialisation to meet the demand for improved amenities.

It is against this background that we must measure the achievements of Imperial Chemical Industries of Australia and New Zealand Ltd., which from small beginnings at its incorporation in 1928 has grown to be one of the largest manufacturing and trading organisations in Australia. A recent issue brings the paid-up capital to £A10,000,000. I.C.I.

TRALIA EALAND

Australian chemical factories are concentrated round the group of large towns in the south-east corner of the continent

NEWCASTLE •
ADELAIDE SYDNEY •
(Botany Bay)
MELBOURNE

retains 57% of the ordinary share capital. Twenty-two years of hard work have gone into the development of the company to its present strength, but so many new plans for expansion are in hand that I.C.I.A.N.Z. must be considered as being only in an early stage of its development. The Australian part of the company, as at present organised, consists of four operational groups. Each of these groups has some link with the early pioneer development of Australian industry in the days before I.C.I.A.N.Z., or indeed I.C.I., was conceived.

Nobel Group. Explosives were first made in Australia at Deer Park near Melbourne as long ago as 1874 by Jones Scott & Co. of London, working under German patents. Readers will at once compare this with the date on which Nobel began operations at Ardeer—1875. Then in 1888 Bickford Smith & Co. set up an Australian factory to make safety fuse, only 57 years after the first safety fuse was made by them in Britain. Their example was followed a few years later by the Kynoch Co. and Eley Bros. of Birmingham, who established Australian factories to make rifle ammunition and sporting cartridges. Australia thus saw the duplication on a smaller scale of the British explosives manufacturing interests that were later to be absorbed by I.C.I. in Britain. In Australia they were absorbed in 1925 by Nobel (Australasia) and today form the Nobel group of I.C.I.A.N.Z.



(Picture Post Library)

1770 BOTANY BAY: Captain Cook proclaims New South Wales a British possession



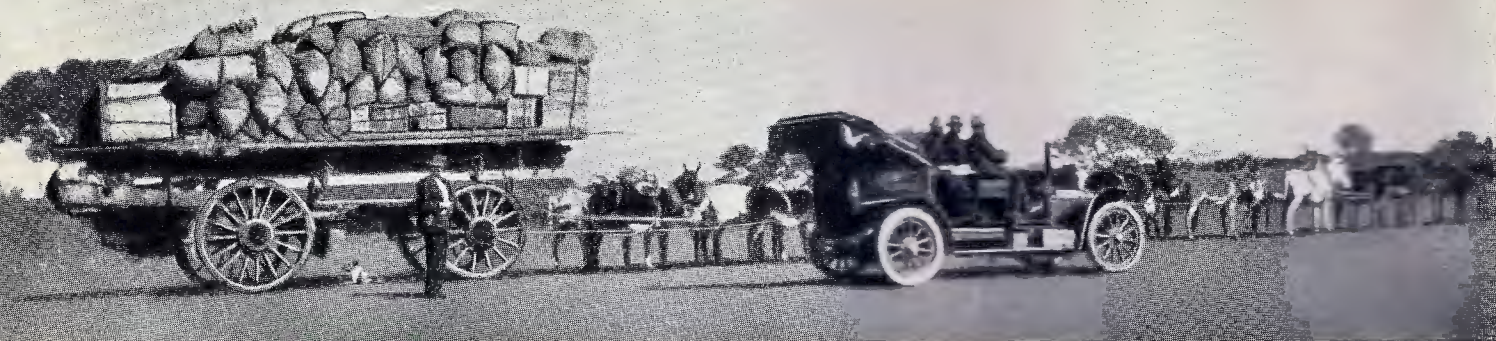
(By Courtesy of the Parker Gallery)

1801 SYDNEY: As it began to develop after the arrival of early white emigrants



(By courtesy of Illustrated London News)

1876 AN AUSTRALIAN EXPLORING EXPEDITION: It was not until the '70's that the hinterland of Australia was surveyed



1928

WESTERN AUSTRALIAN TRANSPORT: *Eleven tons of explosives drawn by mule train*

Chemical Group. Naturally the early history of the chemical industry in Australia is linked with the manufacture of fertilizers. The Mount Lyell Chemical Co. began to manufacture sulphuric acid and superphosphate at Yarraville near Melbourne in 1904. When during the first world war it became difficult to import chemicals from Britain they expanded to making caustic soda and chlorine. The Mount Lyell Co. became a part of Commonwealth Fertilisers and Chemicals Co. in 1929, but the chemical plant at Yarraville was purchased by I.C.I.A.N.Z. in 1936. Through the years additions have been made to the range of products at Yarraville until the tiny site (9 acres) is supporting the manufacture of a truly impressive range of chemicals—chlorine, caustic soda, D.D.T., benzene hexachloride, methoxone, hydrochloric acid, zinc chloride, potassium chloride and aniline.

1941—*Wartime Expansion*

In contrast to Yarraville the I.C.I.A.N.Z. plant at Botany Bay, New South Wales, is spacious and modern. It was built in 1941 to meet the demands of the last war. Ample space for development has been provided, and the plants are laid out with an eye to expansion. The first product made at Botany was carbon bisulphide (1942). And now, near the spot where Captain Cook landed in 1770, a modern chemical factory is in full production.

Associated with the Chemical Group is the Newcastle Chemical Co., whose works are at Newcastle, New South Wales. The company is jointly owned by I.C.I.A.N.Z. and the Broken Hill Co. I.C.I.A.N.Z. are responsible for technical operation of the factory. This company is an excellent example of industrial co-operation, the plant being designed to use some of the by-products of the Newcastle Steel Works as raw materials for the production of other chemicals and to produce chemicals necessary to the steel industry.

Alkali and Phosphate Group. In 1934 I.C.I. decided to undertake

alkali production in Australia, and so I.C.I. Alkali (Australia) was then formed. South Australia was chosen as the site most suitable for obtaining the main raw materials—limestone and salt. The salt is obtained from sea-water by solar evaporation in specially constructed saltfields. In a country with a variable climate this is not such an easy matter as might appear at first sight. For good yields the best use must be made of physics, chemistry, meteorology, instinct and good luck.

New Alkali Plant

Construction of the new alkali plant began in 1935 and the factory went into production in 1940. Meanwhile in 1937 ownership of the company had been transferred from I.C.I. to I.C.I.A.N.Z. The output of the plant is at present being increased by extensions, which will be completed this year, by which time £A 4,000,000 will be invested in the Australian alkali industry.



DEER PARK: *An aerial view of the factories and laboratories*

Dyes and Plastics Group. Leathercloth was first made in Australia in 1929 by a company known as the Leathercloth Proprietary Co. which was jointly owned by I.C.I. and by the du Pont Co. of America. I.C.I.A.N.Z. took over the I.C.I. shares in 1935 and the American company's interest in 1936. The Australian product 'Fabrex' corresponds to the I.C.I. 'Rexine,' and now with the production of a cloth resembling 'Vynide' a scheme for doubling the capacity of the whole plant is in hand. The Plastics and Dyestuffs Divisions of I.C.I.A.N.Z. act as selling agents for their opposite numbers in I.C.I. Both constitute markets of considerable importance for the products of the parent company, although local manufacture of urea formaldehyde moulding powders, among other products, has now begun and will doubtless expand.

With its extensive and varied chemical manufacture and with its organisation in divisions and groups, I.C.I.A.N.Z. has thus grown up very much in the likeness of its parent. Nor does its range of interests end here. Through its investments I.C.I.A.N.Z. maintains connections with industries closely related to the chemical field.

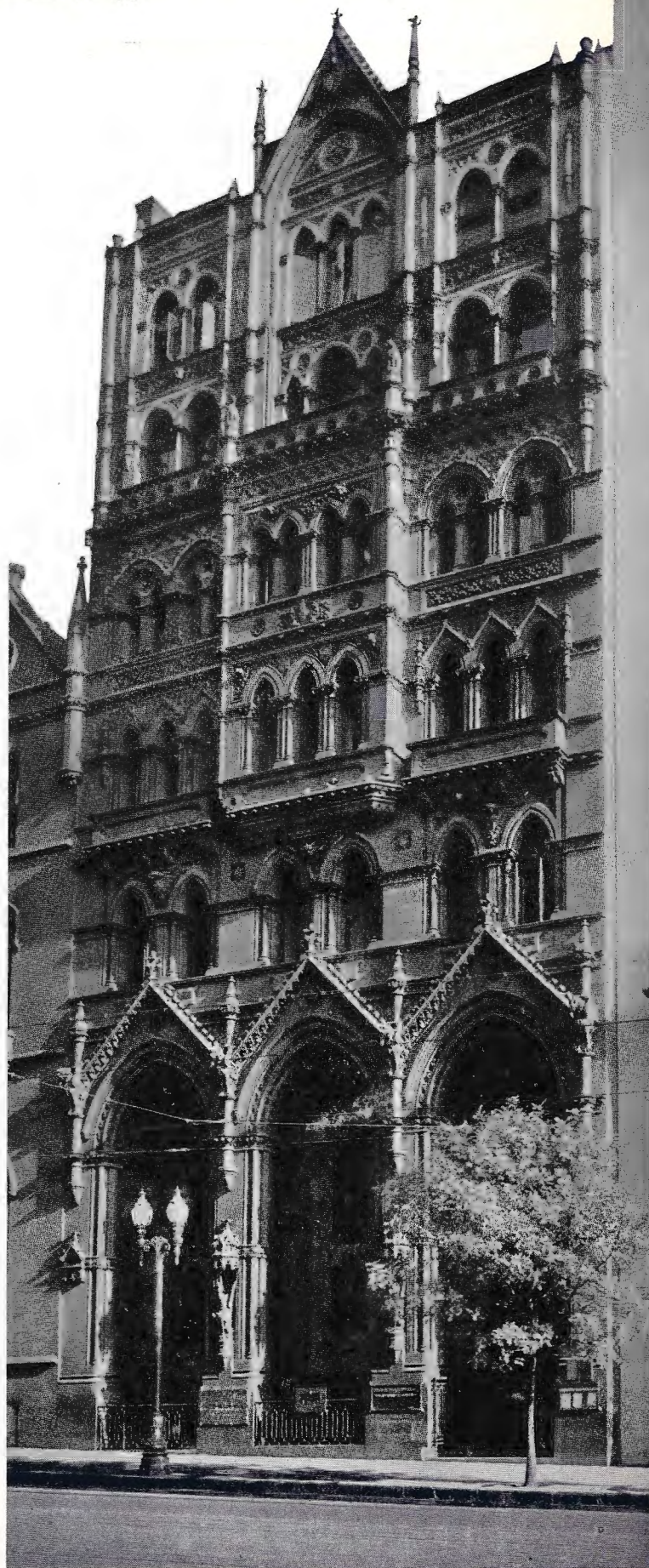
Trade with New Zealand

New Zealand, that delightful land 1300 miles away across the Tasman Sea, is, like Australia, a British country; but there the similarity ends. In comparison with Australia the land of wide-open, seemingly endless spaces with many square miles of desert, New Zealand (Aotearoa, "the Land of the Long White Cloud," as the Maoris know it) seems tightly packed with mountains, rivers, beautiful lakes and rolling green countryside. New Zealand has a plentiful rainfall and its chief raw material is grass, which supports some of the finest flocks and herds in the world. But New Zealand is poor in many things in which Australia is rich—coal and iron ore and most other minerals—so that industrial development must inevitably take second place to the pastoral and agricultural production by which New Zealand lives. I.C.I.(N.Z.), therefore, is almost entirely a trading organisation.

That, as briefly as possible, is the story of I.C.I.A.N.Z. Their factories play a major part in providing the needs of a continent where the standard of living is as high as any in the world, where the whole range of climate from tropical to near antarctic is encountered; moreover a continent which must make provision against being cut off by the emergency of war.

The Real Australia

Fine as are the cities in Australia (and they bear comparison with any in the world), the reality is beyond. The great adventures of the exploring days are more recent than most people think, because the settlers followed so soon after the explorers. None of the savage difficulties of climate or distance deterred them from their purpose, whatever it was: gold or base metals, or good land for wheat, or pasture and assured water supplies for flock or herd. To all the remote outposts of Australia go the representatives of commerce—to Kalgoorlie in the heart of the desert sustained by water pumped through 350 miles of pipe-line; to the fantastic Broken Hill, where lead, zinc and silver ore once pushed their way to the surface but now must be dug from the depths of the earth; to Mount Isa in the Queensland wilderness; to the rugged interior of Tasmania; to the far north-west, a land still known only to the few.



HEAD OFFICE of I.C.I.A.N.Z. at Melbourne

I.C.I. NEWS

HEAD OFFICE

Dr. D. J. Branscombe

Dr. D. J. Branscombe joined the Central Purchasing Department in 1946, and shortly afterwards was appointed Assistant Purchases Controller. He died on 27th January, 1951, after a long and also painful illness.



Possessed of an exceptionally original brain, he was never content to accept the standard methods as the only alternatives but had to seek around lest some other path, however bizarre, might provide a better solution. His remarkable sense of humour sometimes led him into trouble but made him wonderful company, and his friends were legion.

All those who had the privilege of seeing him during the last few months of his life felt uplifted by his dauntless courage. Our petty pains and troubles fell away in his presence. Now for him there is no more pain and he is at rest in some far Valhalla where the bravest of the brave have their reward. To his wife, who shared the agony of the struggle with him, goes the deepest sympathy of his multitude of friends in I.C.I.

ALKALI DIVISION

M.V. Thorium Wrecked

M.V. Thorium, the biggest and second-newest of the Alkali Division coastal craft, sprang a leak in heavy weather crossing Morecambe Bay on 12th January on her way from Raynes to Fleetwood with a cargo of 600 tons of limestone. In spite of the best efforts of the crew, the leak was faster than the pumps could handle and she began to sink.

The captain, Mr. J. R. Atkinson, knew that she could not reach Fleetwood Jetty and the chances were that she would sink in the fairway of the Wyre estuary before she got there. He therefore decided to beach her where she would be in fairly easy reach of the shore. By now she was listing heavily and the tide was wrong, but he managed to get her on to the sand clear of the channel just off Fleetwood. Here she stuck, and the crew were taken off by the Fleetwood lifeboat. In spite of her flat bottom, which is designed for sitting on the mud at Fleetwood Jetty, her list was such that she turned over



M.V. Thorium beached near Fleetwood

on her side. However, at low tide she is very nearly high and dry.

Salvage work could not start till the end of January when the tides were suitable. So far it has been going well and the recent storms do not appear to have done much damage.

Hazards of a New Order

Recently one of the Alkali Division customers in Beverley, near Hull, changed over to the delivery of caustic soda liquor by road tanker instead of by rail. Mr. R. A. E. Chambers of Division Road Transport, accompanied by Mr. F. Jackman, went to reconnoitre the route with the first load of caustic liquor in one of the Divisions eight-wheeled articulated 12-ton Scammells. All went well until they left Goole, when the light mist that had been hanging about all day turned into fog. This slowed up matters, as, although there seemed to be plenty of signposts pointing to Beverley, the roads did not look up to much—anyway to the tanker, in spite of the optimism of local inhabitants.

At last another, much broader, turning hove out of the fog. It, too, was marked "Beverley." They went down the turning and all seemed well—for a couple of hundred yards. Then, before they could do anything, the hedges closed in on to the tanker and they were in a lane with nothing to spare. As it was impossible to turn round, they pressed on, with the lane getting narrower and narrower.

Finally, the hedges disappeared and they emerged on to an open level tract of country with two old windmills sticking up over the low-lying fog, which was just showing signs of

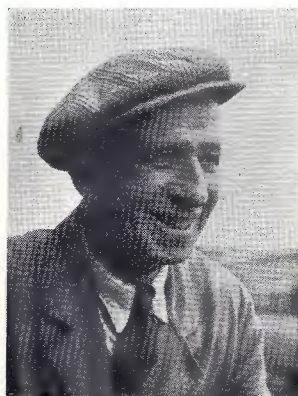
breaking up. They stopped the tanker and were getting out to find their bearings when suddenly something went over the tanker whistling like a spent bullet, followed closely by another and then two more, the last of which ricocheted off the tank with a clang. Hastily they jumped back into the cab and drove off as fast as they dared.

Just then the fog cleared as suddenly as it had come down; they drove off into Beverley, which loomed up right ahead, leaving four astonished golfers gaping at the latest hazard on their links.

BILLINGHAM DIVISION

Mr. E. A. Goodwin

Mr. E. A. (Ernie) Goodwin of Casebourne Works, Billingham, retired on 30th December last after fifty years in the cement industry, thirty-seven of which were spent in the laboratories at Casebournes. Ernie is an exiled Cockney, having migrated from Greenhithe (London, S.E.) in 1914.



Short and dapper, and possessing that perkiness of manner which has come to be recognised as a characteristic of those born and bred in the "Smoke," his Cockney accent has been unaffected by thirty-six years of living among Teessiders. Ernie's job? Well, in a way it was sabotaging his own

production drive. He spent one half of his time making six-inch concrete cubes and, through the medium of a pressure-testing machine, spent the other half breaking them up! Once asked if he found the job monotonous, Ernie replied: "No; they don't *all* break up in exactly the same way."

Bromley Beat Synthonia in Cup Tie

Billingham Synthonia were beaten at home by 3 goals to 1 in their amateur cup tie with Bromley, the Southern cup favourites, on 31st January. Some 4500 spectators, including 1000 Kentishmen, watched the match.

Billingham attacked at once but were repulsed by Bromley, who retaliated by putting Synthonia on the defensive and scored their first goal after twenty-eight minute's play. The excitement had hardly died down when Synthonia scored from a penalty kick and nearly netted a second goal just before half-time. Within two minutes of resuming, Bromley scored again and seven minutes from the end got a third goal.

So Billingham's cup hopes for 1951 are gone, but gone to a good team.

Mr. H. E. Whittle

Mr. H. E. Whittle, the well-known athlete, who so successfully captained Great Britain's European Games team at Brussels last August, has been transferred from Huddersfield Works to Nylon Works, Billingham, and has joined the Synthonia Club.

This distinguished all-round athlete is holder of the British decathlon championship, was Amateur Athletic Association

440 yards hurdles champion for the last four years and was A.A.A. long jump champion in 1947 and 1949.

DYESTUFFS DIVISION

Burns Supper

Mr. John M. Bannerman, president of An Comunn Gaidhealach (the Highland Association), former rugby internationalist and "Alastair" of the B.B.C.'s Gaelic lessons, was a warmly welcomed guest of honour when he proposed "The Immortal Memory" at the annual commemoration and supper of I.C.I. Burns Club at Grangemouth on 27th January.



Piping in the haggis at Grangemouth

Dr. R. W. Lapsley, who presided, welcomed a large company and said the Kilmarnock Grace, after which the haggis was piped in by Mr. W. Dick, followed by a picturesque escort with bonnets to match the grace. Mr. J. G. Fordyce whetted all appetites with the traditional "Address" and the catering staff of the works excelled themselves in the supper which followed.

Mr. G. F. Wood proposed the toast of "Town and Trade" and said that although Grangemouth had a proud history its greatest days were yet to come. Industrialists today recognised that town and trade were inseparable.

He paid tribute to the splendid record put up last year by I.C.I. It was very gratifying to hear of further developments in the future so that the local works would continue in the forefront of chemical manufacture. With the immense developments ahead he felt that the future of Grangemouth was assured.

Chamber of Commerce Prize Award

Mr. N. Senior (Production Planning Dept.) has won a Huddersfield Chamber of Commerce prize at the Huddersfield Technical College evening classes. Mr. Senior is taking a course to admit him to membership of the Institute of Industrial Administration and also will sit for the Common Intermediate Examination for the British Institute of Works Managers.

GENERAL CHEMICALS DIVISION

Two Divisions share Ambulance Service

An interesting ceremony took place at the Salt Works, Weston Point, on Thursday, 11th January, when the newly erected ambulance room, designed and built by General

Chemicals Division, was officially handed over to Salt Division. Major F. H. Bramwell, General Chemicals Division Chief Engineer, whose department was responsible for the planning and building, passed the key to Mr. C. R. Prichard, chairman of Salt Division, and in a short speech drew attention to the excellent co-operation which existed between the two Divisions.

The ambulance room, although now the property of the Salt Division, will serve employees of both Salt Works and General Chemicals Chief Engineer's Department. Nurse L. Twigg, of Salt Division, and Dr. J. D. Paterson, Works Medical Officer of General Chemicals Division, have a spacious building and all the equipment necessary to provide first-class treatment for their patients.

This new medical department, designed and built by one Division, subsequently handed over to another, staffed by a nurse from one Division and a medical officer from the other, and catering for the needs of the sick and injured of both Divisions, is a reminder of the fact that we are truly of one family in I.C.I.

Mr. J. Orr Hughes

In any story of the Cassel Cyanide Company a leading place in many chapters would be occupied by Mr. James Orr Hughes, who, starting work with that company in his teens, retired from I.C.I. at the end of last year after 46 years' service.



"Jimmy" Orr Hughes, as he is affectionately known to his many friends and colleagues, has devoted his whole working life to the cyanide industry, and to him it has always been of absorbing interest. Although his primary responsibility has been the commercial side of the business he spent many long hours in his early days studying

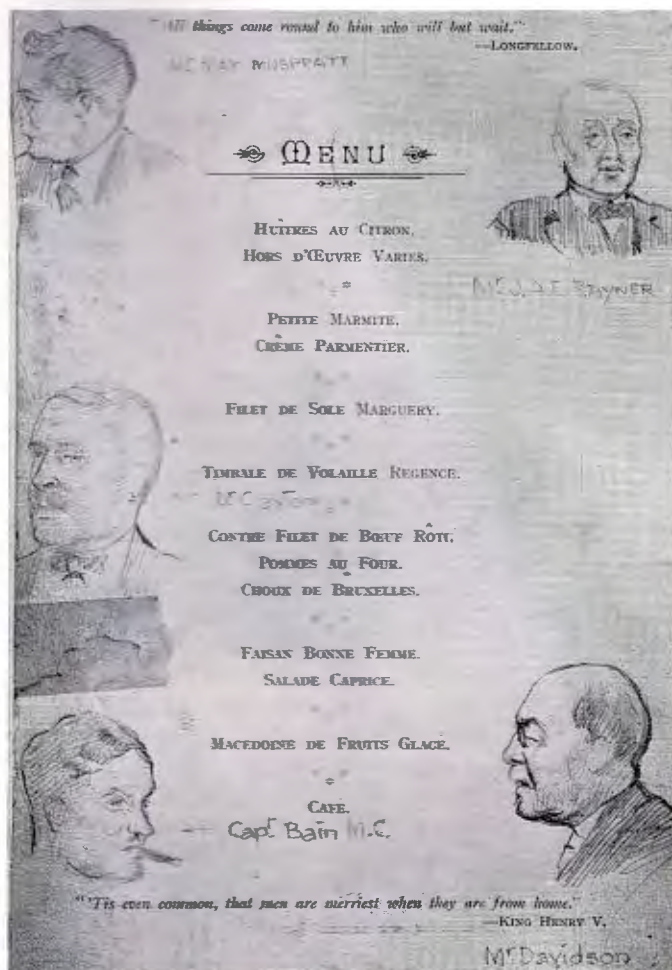
its technology, and he always made it his aim to keep abreast of new developments. He has been ever jealous to preserve the quality and reputation of the product he sold, and no commercial man penetrated more frequently into research and production circles to plead the customer's cause. One of his oldest friends, himself a competitor in the cyanide industry, when asked by younger men for information about cyanide would say "Go and ask Mr. Hughes. What he doesn't know about cyanide isn't worth knowing."

On the occasion of his retirement Mr. Hughes was presented by the Division chairman with a gold cigarette case as a token of affection and esteem from his many friends and colleagues in I.C.I., and later, at a complimentary dinner, his health was proposed by Dr. Alexander Fleck, a deputy chairman of I.C.I., who for many years was closely associated with him both in the Cassel Cyanide Company and later in the General Chemicals Group, as it then was.

Mr. Hughes will now be able to devote more of his time to his home and garden, which he has so often had to leave behind him as he travelled abroad on the Company's affairs. Nothing will please him more, if he is able, along with his wife, to return to some of his favourite haunts in Europe and to cross the Atlantic again to look up relatives and old friends in America.

Captain Bain, M.C.

We reproduce below a photograph of a menu of an historic dinner, the Welcome Home dinner given by the United Alkali Company on Tuesday, 18th November, 1919, to members of the company who had served with H.M. Forces during the first world war.



On this copy of the menu Mr. W. H. Hutchins, late of Alkali Division, made sketches of United Alkali Company personalities present. In the bottom left-hand corner is Sir Frederick Bain, our late deputy chairman. Sir Frederick, then Captain Bain, M.C., had joined United Alkali Company the previous April. In the chair at the dinner was Max Muspratt Esq., chairman of the United Alkali Company.

Humane Society Award

Mr. Baden Powell Owen, who is employed in the Castner-Kellner main workshop, has been presented with a letter of commendation and a cheque by the Liverpool Shipwreck and Humane Society for rescuing a small boy from drowning in the river Dee.

Mr. Owen, who was on holiday at Chester, was sitting on the river bank with his wife. Some distance away, two small boys were feeding the swans. Suddenly Mrs. Owen noticed that one of the boys had disappeared. Mr. Owen immediately ran along the bank, plunged into the river and brought the little boy ashore.

Chess Challenge

A small group of chess enthusiasts at the London offices of Chance & Hunt challenge any other section of I.C.I. to correspondence games. Moves in these games would be sent to opponents on postcards.

Any persons or clubs interested are asked to contact Mr. C. S. Mobbs, Chance & Hunt, 5-7 St. Helen's Place, London, E.C.3.

METALS DIVISION

"Like Father—Like Son"

Following in his father's footsteps (or, more accurately, boot steps) Keith Huntley of Landore works has recently achieved an ambition shared by many but attained by very few.

In the amateur international soccer match at Leicester in January this nineteen-year-old player—well known to Metals Division campers—was chosen to play at outside-left for Wales. The team's defeat by their English rivals was mitigated for the new international by the fact that he scored the single Welsh goal.

Keith's father, who works in the Fitting Shop at Landore, was capped for Wales as left-half some twenty years ago

Mr. R. Foxley

The Fitting Shop at Witton lost one of its stalwarts on 12th January when Mr. R. Foxley retired. He was one of the original "Kynoch men," of whom there are now only four left in the Fitting Shop. He started his 42 years' service in 1907 in the old Gas Engine Department at Holford, under Mr. J. Ingram, where he was responsible for the despatch of gas engines abroad. In 1924 he was transferred to the Fitting Shop under Mr. D. Mackie, and took charge of the progress stores, a position he held until 12th January, 1951.



On 19th January he was presented, on behalf of his workmates, with a cheque by his present shop manager, Mr. R. Keeling. Mr. Foxley is a keen gardener, his main interest being the cultivation of roses.

NOBEL DIVISION

Presentation to Mr. John Rogers

More than 150 senior members of the Nobel Division staff, together with many retired colleagues, welcomed Mr. John Rogers, Chairman of I.C.I., at a complimentary dinner at Ardeer Recreation Club on 1st February. This was the first major Divisional function attended by Mr. Rogers as Chairman.

Dr. J. W. McDavid, chairman of Nobel Division, who presided, said when proposing Mr. Rogers' health after dinner that there was a happy coincidence in the occasion because twenty-eight years ago Mr. Rogers was entertained to a similar dinner on his election to the board of Nobel Industries

Limited. Now Mr. Rogers was being honoured on his election as Chairman of the Board of Imperial Chemical Industries Limited.

Dr. McDavid briefly outlined the beginnings of Mr. Rogers' career from when he became the first Ardeer research chemist in 1899. In business the Chairman's methods, said Dr. McDavid, were direct. He had the capacity to listen and question shrewdly, and his desk was never encumbered with paper. He liked the direct personal way rather than dealing with long memoranda, and he was always willing to see people and give, within reason, a sympathetic interview. At all times Mr. Rogers had been willing and ready to give the benefit of his counsel, and for many years his colleagues on the Board of I.C.I. had benefited from his wisdom.

"Now," said Dr. McDavid, "when he might have thought of taking things easier, his colleagues have appointed him to be their Chairman. We who know him can assure others, who may not know him so well, that the affairs of our great Company will be in safe hands."

"We are proud of our Mr. Rogers. We are proud to think that a chemist from Ardeer, with no special influence to push him, should have reached the eminent position of head of the Company."

Dr. McDavid then presented Mr. Rogers with a pair of antique silver candlesticks which were of Scottish craftsmanship of the 1740 period and a silver tankard.

In reply to the toast Mr. Rogers said the occasion aroused emotions which could not readily be put into words. He greatly appreciated the compliment paid to him when recently the Directors of I.C.I. had elected him as Chairman of the Board. It was impossible not to feel gratified by such an expression of trust, but at the same time he was deeply conscious of the responsibilities. Nevertheless, in accepting the post he was encouraged by the knowledge that throughout I.C.I. there was great good will and loyalty.

It was not accidental that Ardeer Factory and Nobel Division were the first to be visited since he had been elected to his present office; it was natural that this should be so, because in Ardeer he had started his career and gained much experience.

The Provost of Saltcoats

Mr. T. M. Gourlay (Civil Engineer, Ardeer) has been a stalwart in Saltcoats municipal affairs since 1945, when he was first elected to the Town Council. In 1946 he was made a bailie, and two years later, in 1948, he became Senior Bailie on the Council. Mr. Gourlay has now achieved the highest honour in the town by being appointed Provost in succession to the late Provost Charles Shore.

Provost Gourlay has served the Council vigorously on various committees and is an Ayrshire County Councillor. He takes a keen interest in music, and his rich bass voice has frequently added to the pleasure of Ardeer concerts.

Mr. Horace Barlow Honoured

Mr. Horace Barlow (deputy works manager, Westquarter Factory) was awarded the M.B.E. in the New Year Honours List for distinguished service to industry over many years.

Mr. Barlow joined Nobel's Explosives Co. in 1913 and during his early years of service gained wide experience in the laboratories and plant processes in all aspects of detonator

manufacture. He became chief superintendent and, in 1938, deputy works manager.

During the 1939-45 war his energy and enthusiasm contributed much to the factory's outstanding effort. Besides his supervisory work in the factory he was A.R.P. controller and officer commanding the factory Home Guard unit.

Mr. T. Donaldson

By the death of Mr. T. Donaldson at his home in Ardrossan on 24th January, Nobel Division has lost one of its pioneers.



Mr. Donaldson played a great part in moulding the industry to its present shape, and in the following note Mr. Adam Wilson, a retired chairman of the Division, pays a tribute to Mr. Donaldson, who was always his close friend and colleague.

"The death of Mr. Tom Donaldson marks the passing of one of the stalwarts who served long and faithfully in the building up of the Nobel Division from the very early days of Nobel's Explosives Company. Mr. Donaldson joined Nobel's

as a laboratory apprentice at Ardeer when a boy almost exactly sixty years ago. He then entered Glasgow Technical College as a full-time student and qualified there, returning to Ardeer in 1897, when he was straight away put on to supervision of nitroglycerine production.

"At the end of the Boer war the staffing and management of Modderfontein Factory were transferred from the South African company to Nobel's Explosives Company, and Mr. Donaldson then joined the Modderfontein staff, where he supervised various divisions, ultimately becoming assistant manager.

"In 1914 he returned home and joined the technical staff of Mr. Rogers in Glasgow. From then on he was a very live member of Nobel Industries and later of the I.C.I. Nobel Division, finishing up by being Technical Managing Director of the Division for the last ten years of his active business life in this country.

"In 1939, still feeling active on reaching retiring age, Mr. Donaldson agreed to go to Australia to help the I.C.I. organisation there. When war broke out he was immediately commandeered by the Australian Government and rendered invaluable service in supervising the construction and setting to work in that country of military explosives factories, giving of his best so much that his health was impaired and he had to return home in 1944, when he finally gave up active work.

"In business one must say that faithful service and thoroughness were Mr. Donaldson's characteristics, and senior members of Nobel staff will remember that before consulting Mr. Donaldson they had to be sure they knew all the answers.

"His chief recreation in late years was golf. How he enjoyed his Sunday morning penny-a-hole golf with his opponents Ernest Hansford and myself, who well remember how he rejoiced on collecting 2d. from each at the end of a round.

"Tom Donaldson's passing will be regretted by many members of the Division staff who are grateful for his sage advice and guidance ungrudgingly given, also by many friends in other Divisions of I.C.I. and throughout the explosives

Industry in many lands where he was recognised as one of the leading figures in our industry.

"Sympathy goes out to his wife, who was a leal companion and who nursed him so well and faithfully through a long and painful illness; and to his two sons, who following their father's example are now serving I.C.I., one in Ardeer and the other in Australia."

Boys' Brigade Festival of Britain Relay Run

Mr. F. A. Ferguson, of Dumfries Factory, has been asked to accept the post of Section Officer in the Boys' Brigade relay run, planned for the Festival of Britain in April or early May. Teams of boys are to run to London by different routes from Scotland and Northern Ireland, carrying silver batons which will be delivered into the hands of H.M. the King.

Mr. Ferguson, who is captain of the 1st Dumfries Company, the Boys' Brigade, and secretary of the Officers' Council, will supervise the portion of the run between Beattock and Gretna.

PLASTICS DIVISION

Lectures at Royal Society of Arts

Dr. J. C. Swallow, Plastics Division Research Director, delivered a course of three lectures on the plastics industry in January at the Royal Society of Arts. The lectures were part of the season's programme of Cantor Lectures. The first, delivered on 8th January, dealt with Historical Development, and in subsequent lectures on 15th and 22nd January Dr. Swallow spoke on Properties and Fabrication, and The Plastics Industry respectively. The lectures were given in the Lecture Hall of the Royal Society of Arts in London, and Dr. Swallow illustrated his lectures with films, lantern slides and a wide range of samples.



The Cantor Lectures are named after Dr. Edward Theodore Cantor, a surgeon in the India Medical Service who died in 1860. Although he was never a member of the R.S.A., Dr. Cantor left a considerable sum of money to the Society. In his will Dr. Cantor bequeathed his property in equal shares to the Society and to Wellington College for the promotion of their respective objects.

The Society decided that the best way of using the income from the legacy was to expend it upon courses of lectures on industrial technology. The Lectures have gained a high reputation for their authoritative and comprehensive treatment of their respective subjects. Normally, twelve are delivered each session.

A Visitor from Holland

Mr. Pieter van der Hoeven, Managing Director of I.C.I. (Holland) N.V., was at Welwyn recently on one of his regular routine visits. His connection with the Company dates from the time when he joined Messrs. Kerlen & Co. of The Hague, whose main activity was the merchanting of chemical and fertilizer products in Indonesia. He suffered all the hardships

of the German occupation in Holland throughout the war, but immediately after liberation Mr. van der Hoeven appeared at Welwyn. He explained that as he was ignorant about the developments of plastics during the war he wished to learn what he could in the time at his disposal. He stayed almost six months and returned triumphantly to The Hague with four bicycles—a luxury at that time unobtainable in Holland and the only means of transport.

Since 1946, I.C.I. (Holland) N.V. have advanced with gigantic strides. The office has been moved from The Hague to Rotterdam, and even these new premises are already far too small. The new office is now taking shape in a key position in the very centre of Rotterdam. The great progress made by the company is due very largely to the untiring efforts of Mr. van der Hoeven.

'Perspex' Sculpture Exhibition

The versatility of 'Perspex' as a medium for sculpture, and particularly the way it lends itself to beautiful colour effects, were demonstrated at an exhibition held on 25th January at the British Colour Council, 13 Portman Square, London, W.1. The occasion was the award of a £50 prize to the Polish artist Mr. Henryk Blachnicki for his design of an hotel reception office, making use of 'Perspex' and other plastic materials.



*A triptych in 'Perspex'—"The Adoration of Christ,"
by Josephina de Vasconcellos*

Among the artists whose works were shown was the well-known Spanish sculptress Josephina de Vasconcellos, who lives in Westmorland. To many people the outstanding exhibit of the day was her triptych in black and white, a photograph of which is reproduced above. This was carved from the 'Perspex' turret of a bomber which crashed in Cumberland during the war. Madame de Vasconcellos wishes to present this triptych to a Cumberland church as a memorial to the airmen who were killed.

SALT DIVISION

Letter from Korea

From far-distant Korea comes a letter from Fred Green, late of Stoke Works, now serving as a trooper with A Squadron, 8th Hussars.

"I am sorry to be so late answering your letter which accompanied the two *Magazines* you sent out; but as you have probably learnt from Paul Best, it is not easy to write here.

The magazines you sent were doubly appreciated, for another member of my troop is also a member of I.C.I. and was astounded when I produced my copies.

"I can tell you very little of happenings here. In fact you probably know more than me now, for the great burden here is the lack of news. As a substitute we have a constant supply of high-pressure rumours—most of them contradictory. Our spirits have been raised and lowered so many times we have reached a middle state from which no news can move us unless it actually happens. The weather is vile. A campaign such as this demands all your strength and concentration in normal circumstances, but with a second enemy in the weather it becomes intolerable at times.

"The new Centurion that was lost through track trouble was one of our troop tanks. I had the distinction of whipping all the rations off it and helping to destroy it.

"We had a fair Christmas in reserve. The future? No one can tell! Give my regards to all the boys."

WILTON WORKS

Motor Section Inaugural Run

The Motor Section of the Recreation Club held its inaugural event on Sunday, 10th December, when a run was made to Helmsley via Stokesley and Carlton and back by Hawaby and Osmotherley. A depressing drizzle on the Sunday morning was enough to deter some who had promised to go but did not damp the enthusiasm of those who met at Ormesby, and a party of four cars and three motor-cycles set off at 11 a.m.

Fortunately the rain stopped at about 12 and the weather was fine for the rest of the day. The party had an excellent dinner at the Black Swan in Helmsley, and there were many suggestions that we must go there again. The journey back through Hawaby and Osmotherley proved very interesting, and the two watersplashes, which were quite deep, caused some exciting incidents, as drivers found that water in the brakes rendered them useless till they had been dried out.

The party arrived back at Ormesby at 5.15 p.m. after a journey of seventy miles, and the party were very well satisfied with the whole event.

I.C.I.A.N.Z.

Mr. H. J. Barncastle

Mr. H. J. Barncastle has announced his retirement from the position of Managing Director of British Australian Lead Manufacturers Pty. Ltd., a subsidiary of I.C.I.A.N.Z. He will, however, retain his seat on the board of directors.

Mr. Barncastle has been connected with the oil and colour trade of Australia and New Zealand during the whole of his business life and has been associated with British Australian Lead Manufacturers Pty. Ltd. since its incorporation in May 1918.

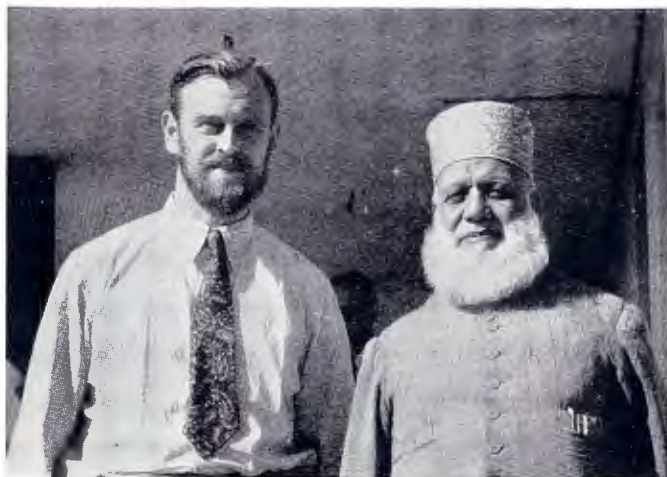
He will be succeeded as managing director by Mr. Stanley R. Heron. Mr. Heron has been with the company for over thirty years, for the past seven in the capacity of general manager.



I.C.I. (INDIA) LTD.

Two Fine Beards

We reproduce below a photograph taken by Mr. B. R. Goodfellow of the India Department, Head Office, during his recent tour of India and Pakistan. On the left is Mr. Roland



Smith, manager of the Chittagong branch of I.C.I. (India) Ltd. With him is El Haj Raschid Ahmad, proprietor of the firm Elahee Buksh, a very old agent of Eley-Kynoch.

Trout-fishing in South India

During a business tour in South India last October Mr. N. D. Harris, of I.C.I. (India) Ltd., took a few days' local leave and visited Munnar, in the High Range District of the Travancore Hills. Here he had a few days' fishing and caught a very fine trout of 6½ lb. in one of the lakes. This fish was the second largest ever caught in South India.



Mr. N. D. Harris holds up his record-breaking catch

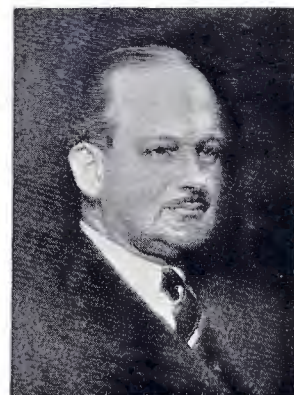
There was a great deal of tall weed round the lake, and as the boat was too small to allow the angler to stand safely there were many anxious moments. The fish, caught on a small Gold Tippet Alexandra fly lure, was in perfect condition. Its

size was authenticated on the spot by the local Angling Association secretary, whom Mr. Harris with great foresight had invited to accompany him for the day.

S.A. AZAMÓN

Mr. R. Gilliland Retires

Mr. R. Gilliland resigned on 31st December, 1950, the position of Managing Director of S.A. Azamón, the I.C.I. subsidiary in Spain. He has held the appointment since 1935. At a party in the offices of S.A. Azamón held on 27th December Mr. Gilliland was presented with a silver cigarette box from the staff, who wished him and Mrs. Gilliland all joy in their retirement in Marbella, in southern Spain, where they now intend to live. Mr. G. G. Fowler has been elected to succeed Mr. Gilliland as Managing Director of S.A. Azamón.



S.A. Azamón celebrated the twenty-fifth anniversary of its foundation on 13th October, 1950. Among those present at the party commemorating the date were two of the staff with 25 years' service—Sr. Soler, the cashier, so well known to visitors to Spain, and Sr. Garrido. Fourteen members of the staff last year completed twenty years with Azamón and have been presented with watches.

THE APRIL MAGAZINE

In our next issue we are privileged to publish the first authoritative account to be given to the world of 'Ardil,' the new wool-like manufactured fibre which I.C.I. has developed from the protein of the groundnut. I.C.I. began work on the idea of 'Ardil' as far back as 1935. Today the results of that work, interrupted by the war, are to be seen in a remarkable product almost indistinguishable to the layman from wool—a product of proven quality, eagerly awaited by the textile trade at a time of great wool scarcity.

This article will be followed by some beautiful photographs of the Lebanon, sent to us from our Beyrouth office. The Lebanon may be truly described as "where East meets West." Each successive conqueror, from Alexander the Great onwards, has left traces of his dominion, of which the most notable are the Roman ruins at Baalbek.

Of our two other features one is from the pen of a worker, Mr. George Lupton of Ardeer factory. He gives a fascinating account of the inside story of pigeon racing. Mr. Lupton was in the news last year when his pigeon Southern Queen won the race from Rennes to Scotland, beating over 3000 other birds. From General Chemicals Division Miss Molly Quinn writes of the stimulating and instructive holiday which can be spent by attendance at one of the summer school fourteen-day courses of the British Drama League.

"DO YOU KNOW?"—Answers (see page 90)

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| I. (i) (c), (ii) (b). | IV. (c). |
| II. (c). | V. (a). |
| III. (b). | VI. 1926. |
| VII. 1 (b), 2 (e), 3 (f), 4 (a), 5 (d), 6 (c). | |

STRIP ROLLING COPPER

The Gigantic Mills of Metals Division



THE FIRST STAGE in strip manufacture is to make up trucks containing metals in the correct proportions for casting. The principal raw materials are copper and zinc; certain combinations of these two metals produce a wide range of brasses.



MELTING OF COPPER and copper alloys is done in this double line of low-frequency induction furnaces. Temperatures up to 1200° C. are involved.

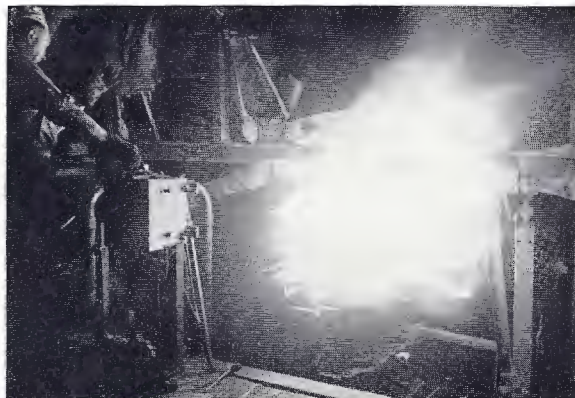
UNTIL the eighteenth century, copper and brass sheets were made by the "battery" process, in which cast metal ingots were heated and then flattened under heavy hammers. But with the advent of water power and later steam, rolling mills superseded the older method. It became possible to roll mechanically long lengths of strip which could be coiled into manageable sizes. Later, power from electricity led to "cold rolling," a process which produces more accurate dimensions and a wider range of working properties.

Several of the ancestor firms of Metals Division were rolling strip by the middle of the nineteenth century, but the Division's main plant has its origins in the decision of the Kynoch concern, in 1888, to acquire its own rolling mills. The object of this was to ensure strict control over the quality of the copper and brass strip needed for cartridge case manufacture. This led to the establishment of rolling plant within the factory and, in turn, when output exceeded internal demand, to participation in the general wrought non-ferrous metals trade.

Today the Division's main strip rolling plant contains many unique mechanical features, all directed to securing continuity of operation and the maximum use of plant. It is probably the most highly mechanised process in I.C.I. today.

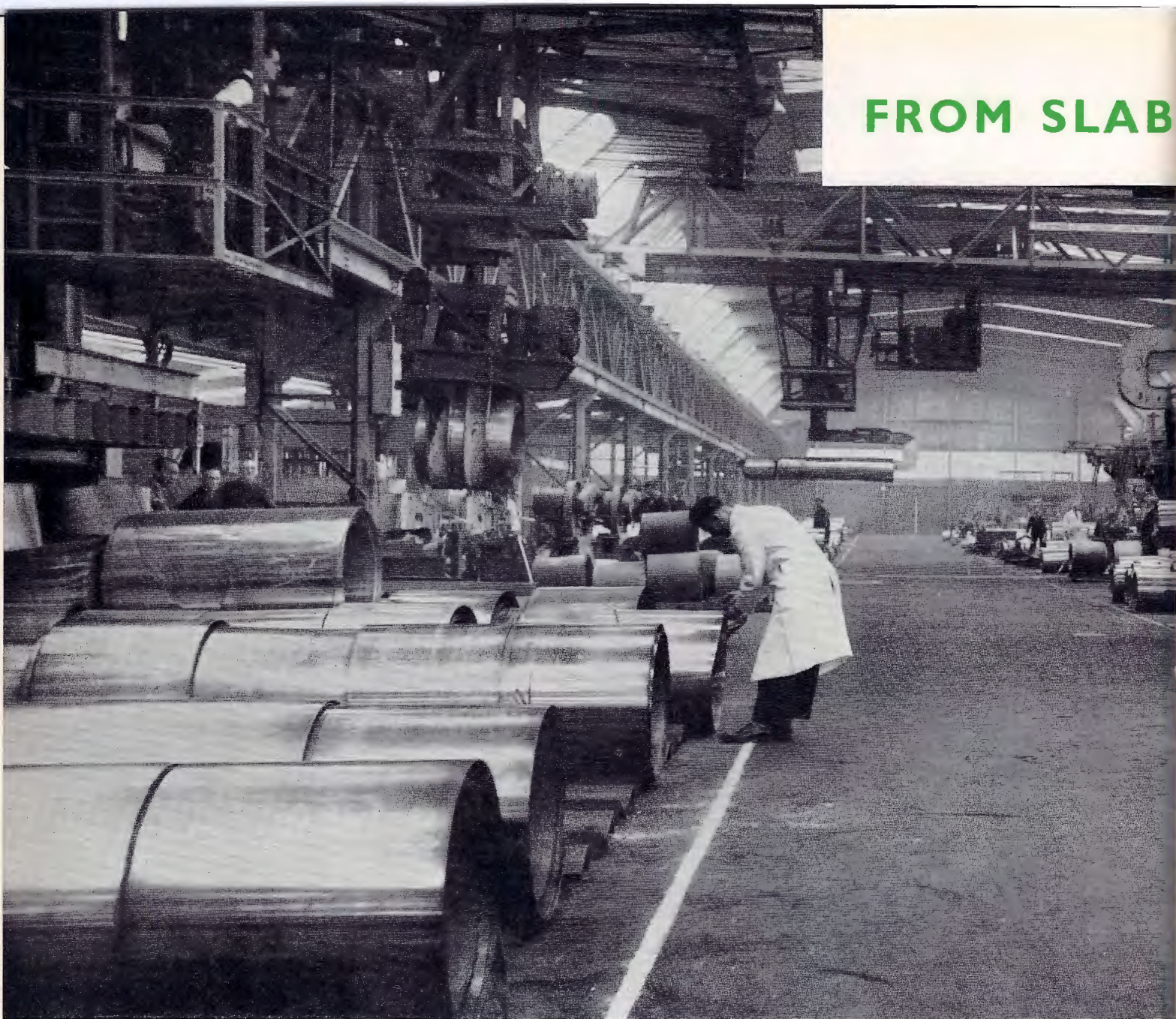
There can be few major industries in which copper and copper alloy sheet and strip do not play a part.

They are used widely in the transport and electrical industries, in general engineering, for brewing and dairy equipment, for printing, and for houses. Large tonnages are employed in making car radiators and headlamps, clocks and instruments, domestic appliances, shotgun cartridges, and electric light bulbs. In building, copper strip is used extensively for roofing and dampcourses and for hot water cylinders and boilers.

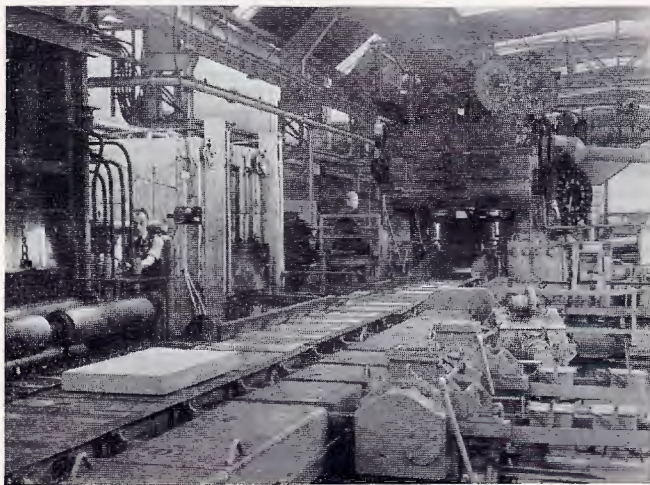


MOLTEN METAL is mechanically poured from these furnaces into water-cooled moulds, producing cast slabs weighing nearly half a ton. Samples are taken for check analysis by the laboratory.

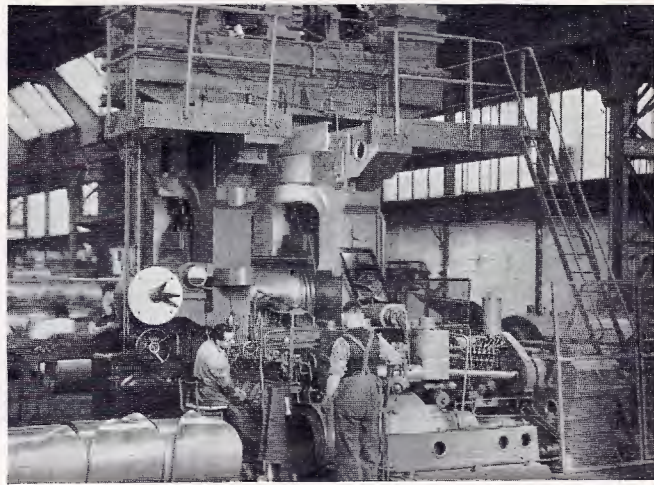
FROM SLAB



THIS VAST BUILDING, covering nearly five acres, houses under one roof the gigantic equipment which reduces copper from slab to strip. The long arms of

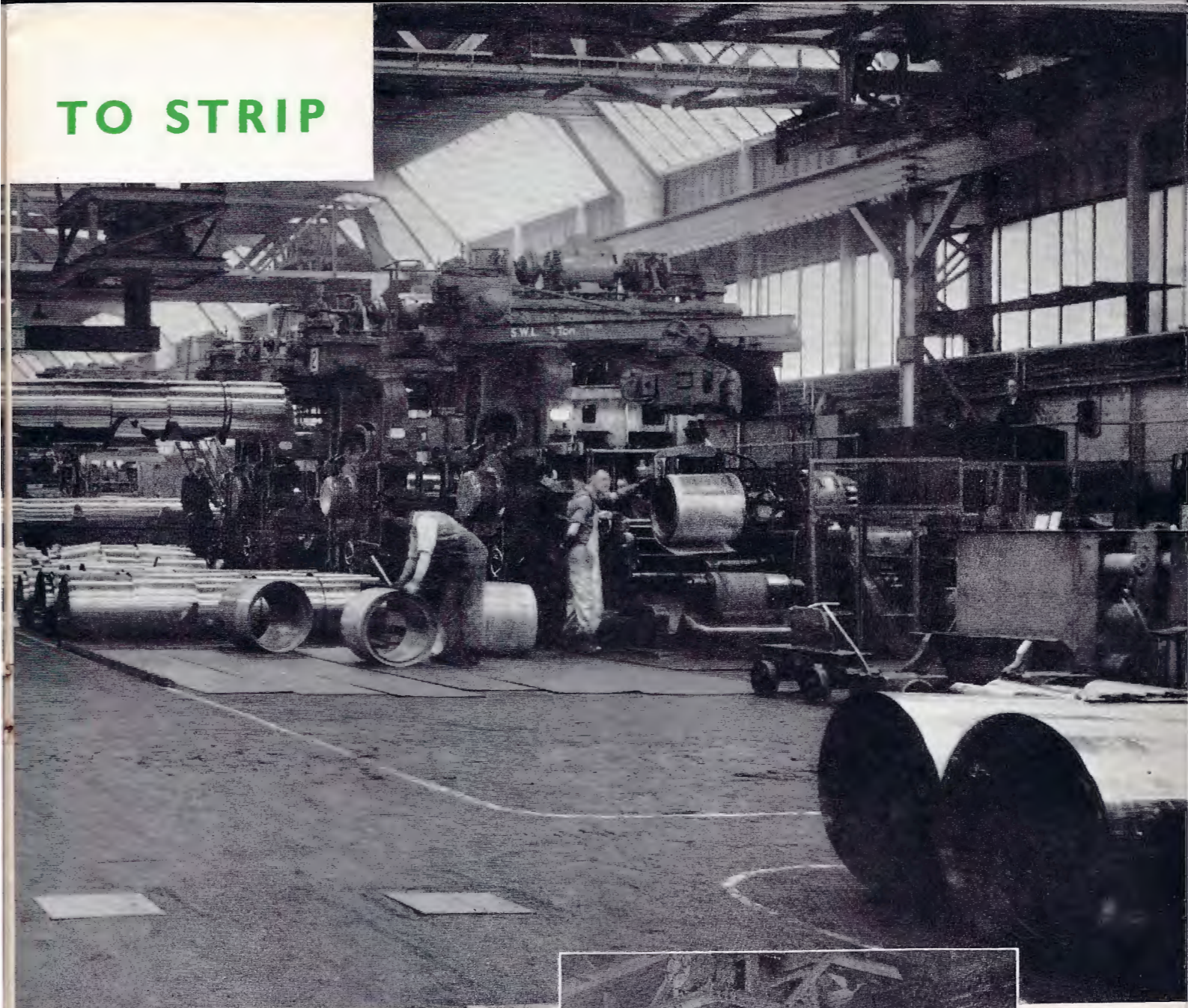


SLABS ARE BROKEN DOWN in this huge mill after having been first heated in a furnace. As each hot slab shuttles to and fro under the rollers the terrific pressure converts it in one minute from a squat four inches of copper into long thin strips 25 in. wide and $\frac{1}{4}$ in. thick.

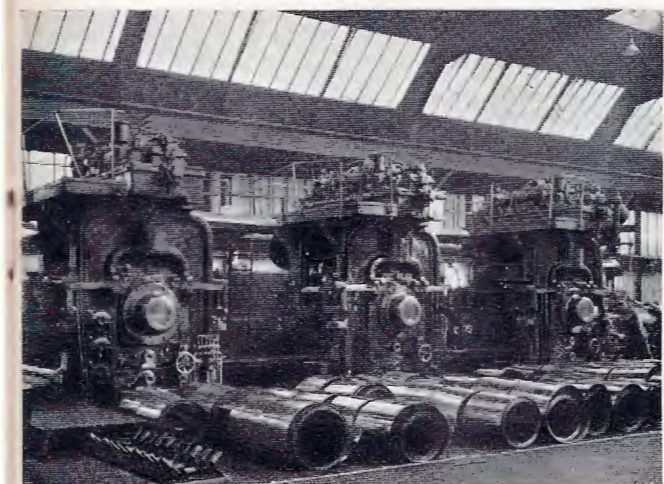


THE SECOND ROLLING is done cold. This mill gradually reduces the $\frac{1}{4}$ in. strip closer to the dimensions required. The strip reaches the mill in the form of a coil.

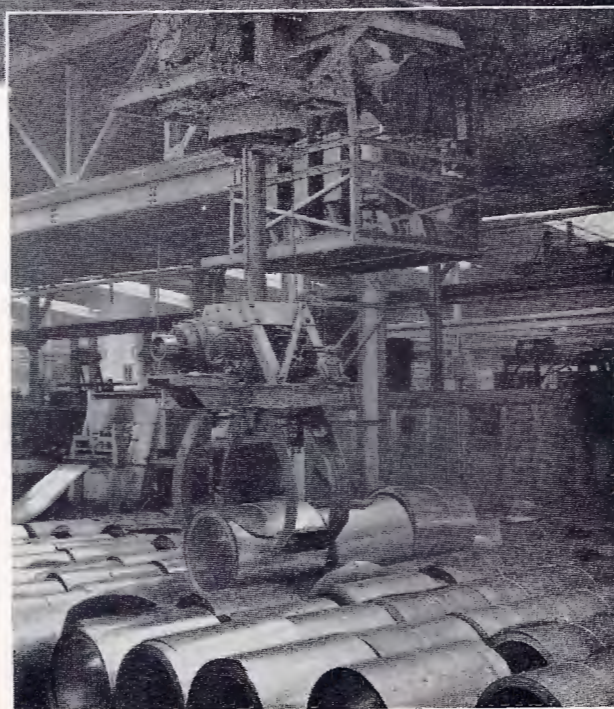
TO STRIP

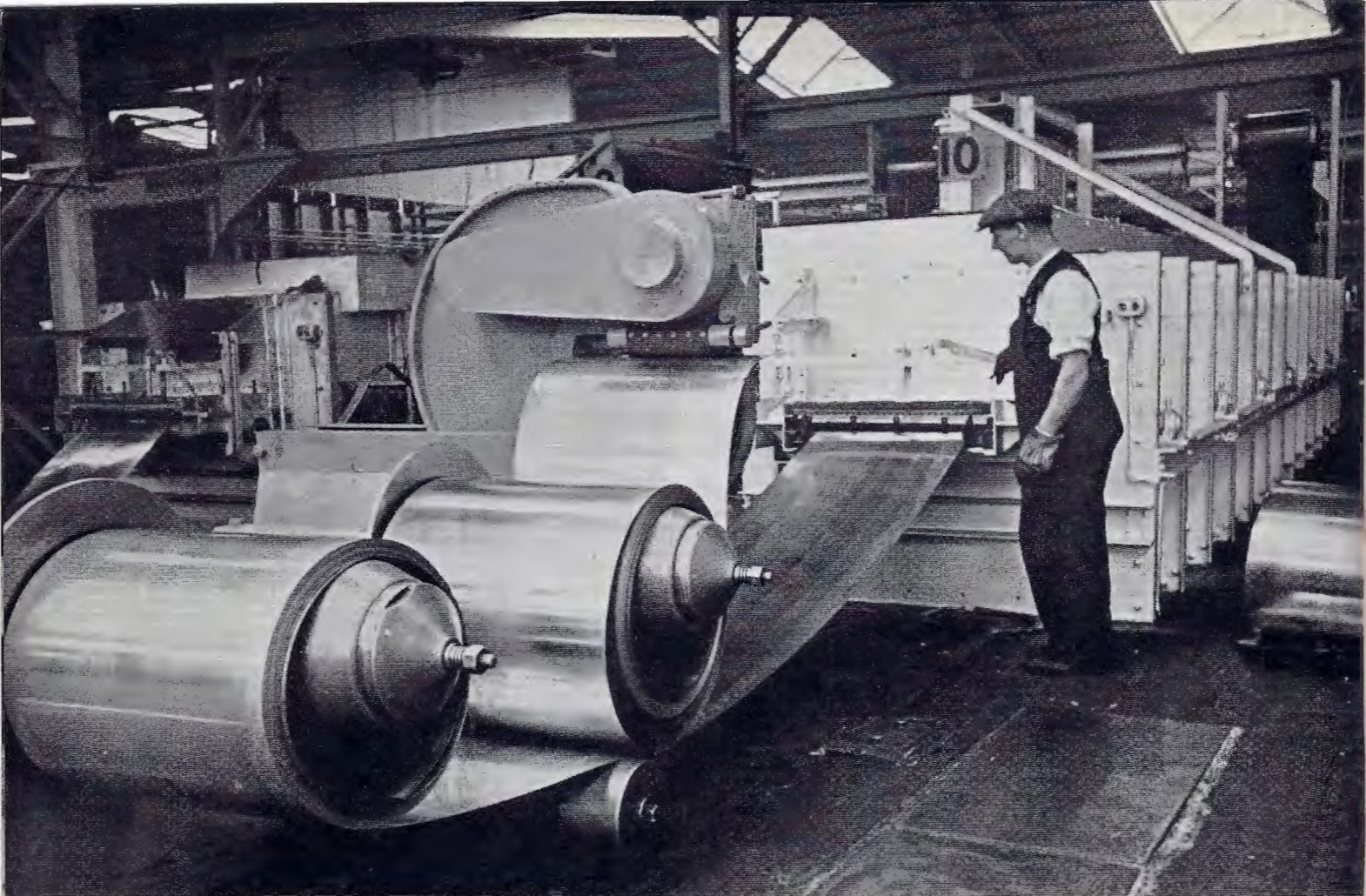


overhead cranes can be seen shifting five coils of copper at a time.



(ABOVE) THE TANDEM MILL, which consists of three separate sets of rolls operating as one unit. (RIGHT) THE OVERHEAD CRANES grab the coils for rapid transfer from one part of the shop to another.

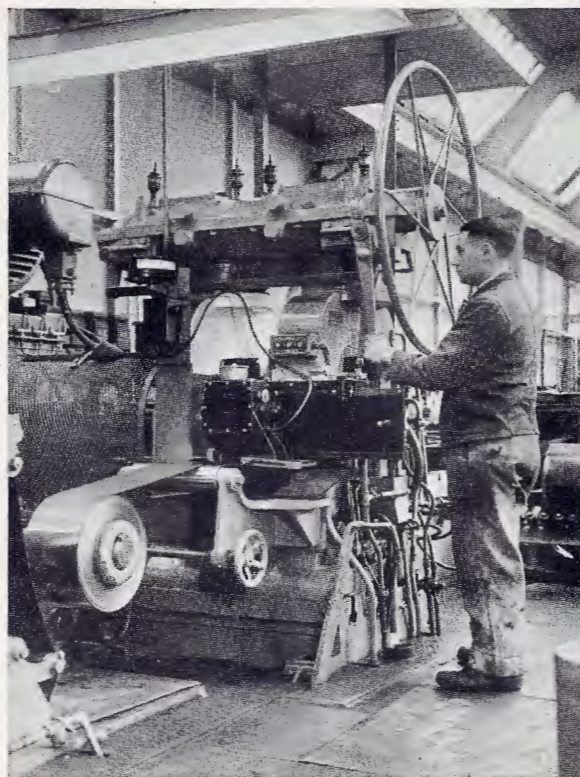




COLD ROLLING HARDENS, so between each stage of rolling the metal must be annealed to soften it for the next operation. Here we see a continuous annealing and cleaning plant at work. Strip is slowly uncoiled through electric furnaces and on emerging is dipped in acid to remove scale. It is then washed in water and dried by hot air.

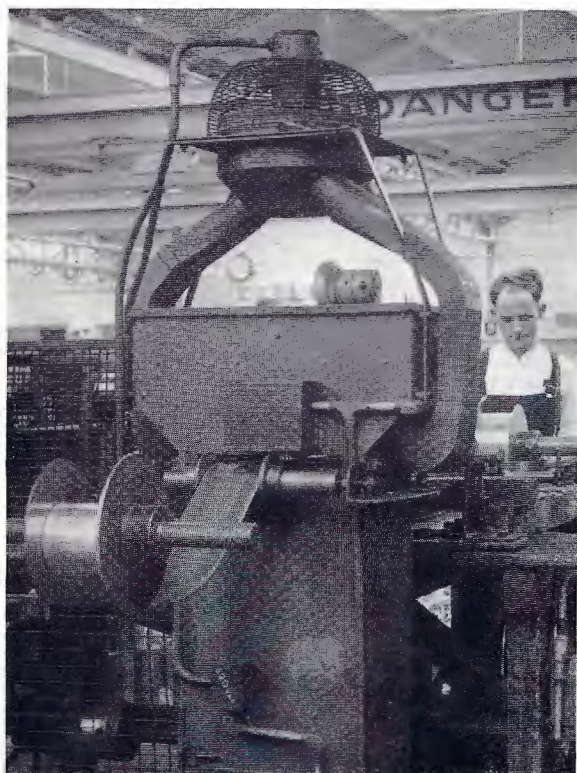


AMMONIA IS BURNT to provide a controlled atmosphere for these pit-type bright annealing furnaces

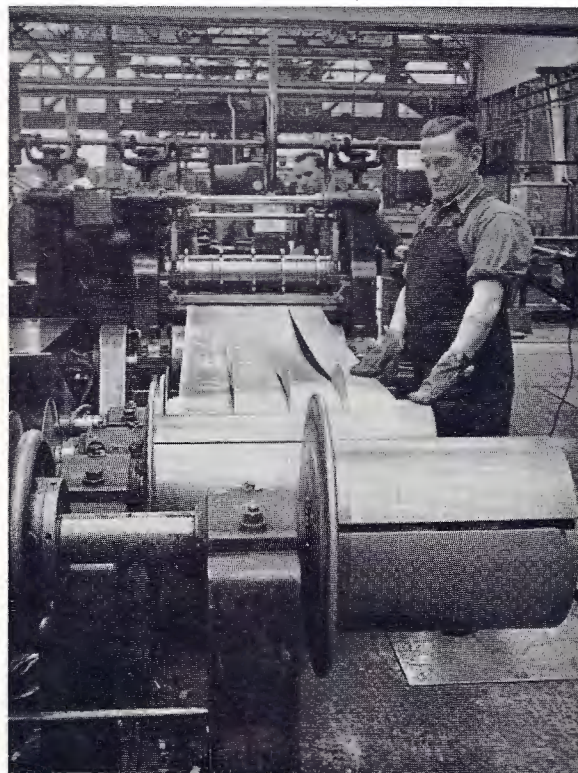


THE "FLYING MICROMETER" detects variations in gauge of the strip passing through these finishing rolls





AN ELECTRONIC EYE examines the very thin strip, such as that used for automobile radiators, to make sure that there are no pinholes in the metal



SHEARING THE STRIP to finished dimensions is almost the final operation in manufacture

PROCESSING THE COLD STRIP



IN THE WAREHOUSE coils of copper and brass are examined and then despatched to markets at home and overseas



Painting Your Own Home

By J. N. T. Adcock (Paints Division)

The housewife of today does not just spring-clean; she repaints and redecorates as well. Statistics show that in every fourth home the woman does the decorating. Here Mr. J. N. T. Adcock, assistant development manager at Paints Division, gives her some practical advice.

LAST year, Mass Observation conducted an enquiry for Paints Division among British housewives to find out their ideas about paint and colour in the home. During the investigation they found that amateur decorating was done in three-quarters of the homes visited. One would imagine that the husband would do the work, but only in half the homes was the work done by the man; in a quarter of the homes it was done by a woman. The feminine interest thus extends far beyond the mere selection of colours, and these hints are intended for women who *know* they have a flair for painting and decorating but somehow have never got round to doing anything about it. They are not meant for the lady from Leeds, quoted in the Mass Observation report, who said: "My husband has not the faintest idea how to do any repair whatsoever, and God forbid that he should ever take up a whitewash brush. I am the handyman of this establishment."

To begin, you will need a certain minimum of equipment. You can't have much less than a 6 in. distemper brush, a 2 in. brush and a 1 in. one, together with a few sheets of medium and fine glasspaper. Don't economise on the brushes—there's nothing more infuriating than constantly having to pick bristles off a freshly painted surface. If you can run to a paper stripping knife, a wire brush and a putty knife, you will have enough to do all the straightforward jobs.

Let us suppose that your living-room walls are papered and that you are tired of the paper and wish to change the whole colour scheme. You propose to distemper the walls, and the change of colour means that the door, windows, skirting boards and picture rail will also have to be repainted. If you are lucky enough to have anywhere to put it, start by clearing most of the furniture into another room and give yourself as much space to work in as possible. Anything you can't move should

be protected by dust sheets, as your early efforts are certain to deposit paint and distemper in places where you want them least.

Then take a look at the ceiling. It is an unfortunate fact that if you do the walls and the woodwork and neglect the ceiling it will suddenly assume a grey and dingy air, which effectively cancels out your attempts at brightening up the room. So make up your mind that the ceiling must be done and begin by washing it down very thoroughly with warm water, using a rough cloth and removing as much of the previous coating as possible. Any cracks in the ceiling should be filled with Alabastine or Keene's cement, a simple but rewarding operation. The cement should be mixed with water to a putty-like consistency and pushed into the crack with the putty knife after the gap has been well wetted. This wetting is necessary if the filling is to stay put; it is also as well to undercut the edges of the crack, enlarging it if need be, so as to provide a "key" for the new plaster.

Now examine the wallpaper. If it is in good condition and seems to be firmly anchored to the wall, leave it alone and distemper over it. This is generally successful unless the paper is very porous, when the suction makes it hard work; a very bright pattern, too, is difficult to cover. If, on the other hand, the paper is loose, you will have to strip it down to plaster. Plenty of warm water will soften it enough for the stripping knife to do its work, but should the paper be varnished or coated with a washable distemper a lot of hard work lies ahead. However, continued soaking and scraping will win in the end.

How to prepare Paintwork

At this stage all the paintwork should be scrubbed with warm soapy water, rinsed with clean water and sanded smooth with glasspaper. All this is more like an intensive spring-cleaning than the fulfilment of your artistic ambitions, but the success of the painting operation will depend on the thoroughness with which you clean down. Paint will not stick to a greasy or waxy surface, and even an invisible film of wax is sufficient to prevent paint drying and cause poor adhesion of the paint film. The filling of nail-holes in the woodwork with plastic wood completes the preliminary work, and everything is now ready for the actual decorating.

When mixing the distemper for the ceiling, aim at a rich creamy consistency—most beginners tend to add too much water. You need not confine yourself to white, but remember that white gives the maximum light reflection, so that if you decide in favour of a cream or pastel ceiling you may find that the room looks darker than it used to, in spite of the fact that you've done the walls in a lighter shade.

Start near the window and do a patch about three feet square at a time, using bold, sweeping strokes in all directions but finishing off with long, light strokes towards or away from the window. If you don't finish off in this manner the brush-marks will be thrown into relief and will look unsightly. Don't try to fill the brush, but merely dip the first inch of bristles into the distemper. If it shows a tendency to run down your sleeve, a rag tied round the handle will help, but treat this as a danger signal that you are trying to put on too much at once.

If the ceiling needs a second coat, give it twenty-four hours' drying before the second application, but don't be depressed if the initial effect is patchy. Unlike painting, distemper always looks better when it has dried out than when it is in

the process of drying. It is best to clean up any splashes of distemper that get on the woodwork or lino as you go along. If they are once allowed to get hard they can be very difficult to remove.

Distempering the Walls

When you have finished the ceiling, start distempering the walls, beginning near the window and working from right to left. Keep the edge wet by short, criss-cross brush strokes into the area you have just done and don't stop for lunch when you are in the middle of doing a wall; carry on until you come to the end of the wall or at some convenient break such as a door, or you will find when you begin again that the join will show. Brush it well into the corners, and rather than stop short of any adjoining woodwork, which will leave an unpleasant gap, take it on to the wood. You will need to apply two coats to get solid coverage, allowing twenty-four hours' drying between coats.

By this time you will probably be bored with the relatively slapdash methods of the distemper brush and longing to have a go at real painting. But before dipping your brush into the paint make sure that the paint is well stirred. Stir with a flat piece of wood, using a lifting as well as a rotary motion. If the paint is not well stirred you will find that the top portion is thin, very glossy and with poor hiding power, while the stuff from the bottom of the can is too thick, and probably a different colour. Most paints are supplied ready for use, but



Start near the window

if you are nearing the bottom of the can, even if the paint has been well stirred, you may have to make good the solvent which has evaporated by adding a little white spirit and stirring until it has regained its original consistency. Stir each time you use the paint. You may find on opening a partly used can that a skin has formed over the surface. Remove this with a knife—in one piece if possible—and throw it away; never try to stir it in.

Rules to Remember

If you are going to paint dark-coloured woodwork a light pastel shade, do use an undercoat. If you try to blot it out with an enamel or gloss paint you will be tempted to put too much on, with the result that ugly "sags" and "curtains" will mar the smooth surface. So use an undercoat and brush it well out, allowing at least twenty-four hours' drying before putting on the finishing coat.

The same rules apply to both undercoating and finishing:

1. Don't overload the brush with paint.
2. Brush the paint in the direction of the grain, then across to spread and even out the coating, and finally with long, light strokes on the direction of the grain. Never dab it on; brush "through" the paint and spread it well over the surface. A certain amount of boldness in attack is desirable provided that it is not allowed to develop into sheer abandon.
3. If there are any deficiencies in your handiwork, don't try to deal with them when the paint has half dried. Either brush them out at once while the surface is still wet or leave them alone until the paint has dried hard, when you can sand them smooth.



*Remember to paint
the inner frames before
dealing with surrounds*

The most convenient order of work is to start with the window, then the picture rail, doors, mantelpiece and lastly the skirting. Certain jobs are best done by following a particular routine; for instance, when painting doors first paint

the moulding round the panels, then the panels themselves and any vertical sections between them. Then do the horizontal sections and finally the uprights and the edges. There is quite a complicated order of painting for sash windows, too, but if you remember to paint the inner frames before dealing with the surrounds you shouldn't find it difficult.

What is more likely to worry you is the fear of getting paint on to the glass. To avoid this, take up rather more paint than usual on the brush, place the brush on the glazing bar and carefully adjust its position until the bristles just reach the glass before drawing it along the bar. If some paint does get on the glass in spite of all your care, wait till it dries and scrape it off with a razor-blade. To real craftsmen the razor-blade treatment is on a par with shooting the fox or wearing brown boots with a bowler hat, but the slightly careless find it a great help. After all this your floor may need some attention. If there is not too much wear the surround can be painted, but wherever there is a lot of traffic, stain and wax will give the most satisfactory result. Any existing wax must first be removed by scrubbing with hot soapy water and then wiping over with white spirit.

Hints for the Kitchen

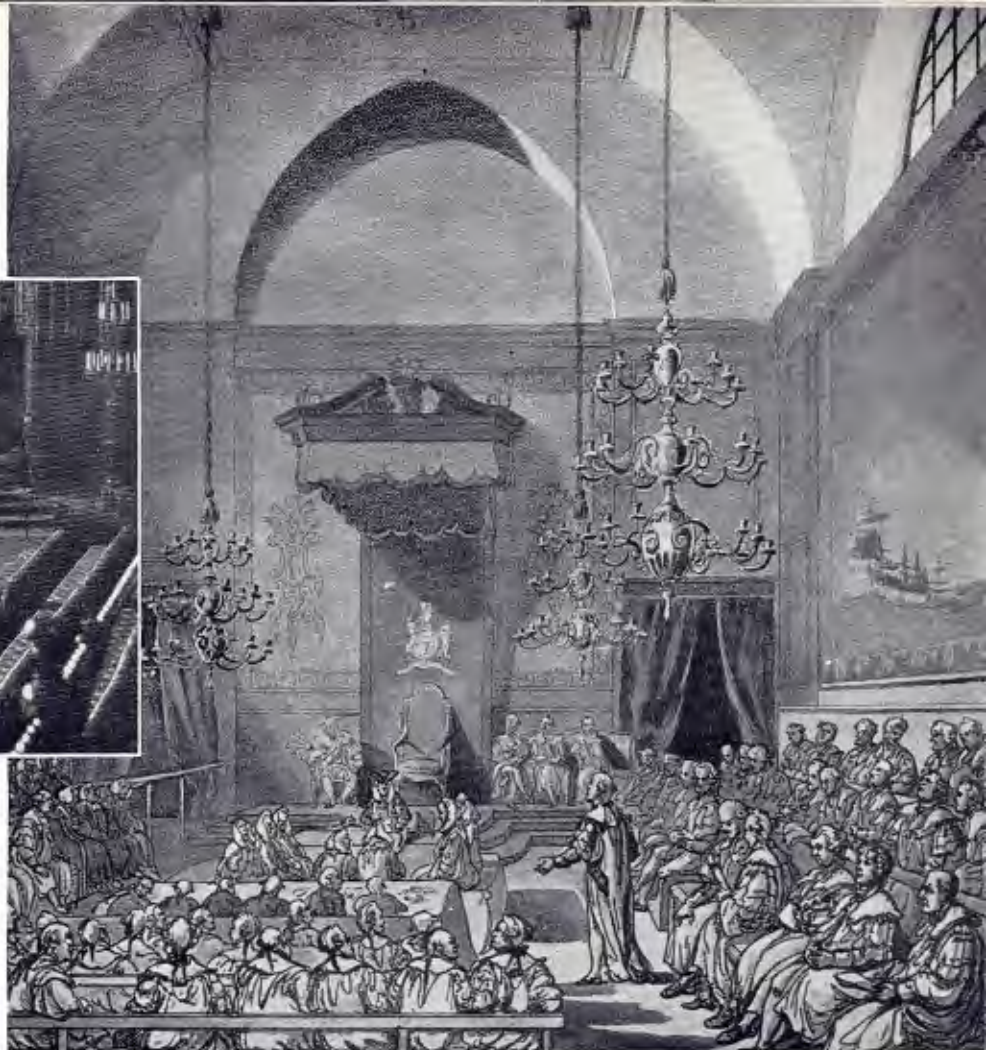
Having brightened up the living-room, you will probably want to tackle the kitchen next. Don't use distemper for the kitchen or for the bathroom—even the washable sort doesn't react happily to hot, moist atmospheres and sooner or later flaking takes place. A gloss paint is much better both for the walls and for the ceiling. Special care must be taken when washing down to remove all traces of grease and old distemper or paper down to the plaster. Cracks in the wall should be filled in the same way as cracks in the ceiling. Then brush on some undercoat which has been thinned down a little with white spirit, and follow next day with another coat at normal consistency. Smooth lightly all over with fine glasspaper and then put on the finish, "laying off" with vertical strokes. This will give you a first-class job, but if you find three coats too laborious, cut out the second undercoat. There is a danger that it may look patchy, but if the plaster was in good shape you may get away with it.

After use, distemper brushes should be washed thoroughly, in cold water and allowed to dry. Paint brushes should be cleaned first with white spirit and then with soapy water, finally rinsing and drying. To keep paint brushes from hardening up overnight or when you knock off for meals, suspend them in a jar of water. The easiest way to do this is to drill holes through the handles, pass a length of stout wire (or an old knitting needle) through the holes, and place the wire across the jar so that the bristles are suspended in position. Do not leave them in water for more than a day or two, or they will get very messy. When required for use again, remove as much water as possible by rolling the handle quickly between the hands and then work the brush up and down on a smooth board to get rid of the last traces.

And here is something to ponder over when you are wielding your paint brush. According to Mass Observation Ltd., there is a sudden slump in the amount of amateur decorating when we cross the border into Scotland, although in England and Wales there is regionally little difference. Why is this? Can it be that the Scots are not the thrifty, hard-working types we always thought they were? Perish the thought—but it makes you think!



THE HOUSE OF LORDS of 1809 destroyed by fire in 1830, with (inset) a recent picture of the House of Lords as it is today. Queen Elizabeth placed the Woolsack here as a reminder that the country's prosperity was based on wool.



(By courtesy of the Parker Gallery)

TEXTILES—OLD AND NEW

By David Traill (Nobel Division)

IN recent months we have read much in the newspapers about the important part which the textile industry is playing in our export drive, but have you realised how important a part Britain has played in the textile industry of the world? In the Middle Ages the woollen industry was the staple industry of England. In those days the law forced people to wear woollen clothes. It was not lawful to wear an all-cotton fabric until 1774. By law the populace had even to be buried in woollen shrouds, and in the registers of various parish churches, for example in Wimborne Abbey, are recorded the fines paid because certain people had been buried in linen shrouds.

Behind the glamour and the victories of Edward III and Henry V was the prosaic but lucrative wool trade. Queen Elizabeth placed the Woolsack in the House of Lords to remind the noble peers that the prosperity of the country was based on wool. (The Woolsack was opened in 1943 and found to be stuffed with horsehair, but this has since been corrected.)

The wealth which the nation derived from wool is reflected in the country in many ways, one of these being what is known as "wool churches" in England. One of the most famous is

in Worstead, the Norfolk town which gave its name to the yarn. There, about the close of Edward III's reign, the "well-to-do merchants and weavers of this flourishing community bethought them that their church was not worthy of their prosperity and began rebuilding on a noble scale."

Lancashire, the ancient home of textile industries, started on wool nearly eight centuries ago. Linen, the flax fibre, was probably the first fibre to be used in our human history, and until the end of the eighteenth century it was the most widely disseminated of domestic industries. It was not until 1600 that cotton was introduced, first in admixture with flax.

Of course, the Indians had made cotton cloth as far back as 1500 B.C.; and although their machinery was crude and primitive, some of their cloth is rarely equalled today in quality and fineness. From India cotton was introduced to China and Japan. The Mohammedans introduced it to Europe. In 1492 Columbus found it extensively cultivated in the West Indies.

Cotton predominated in Lancashire after the introduction of machinery. In 1767 Hargreaves of Blackburn introduced the spinning jenny for spinning woollen yarn. Arkwright, a Bolton barber, improved on Hargreaves' invention and set up



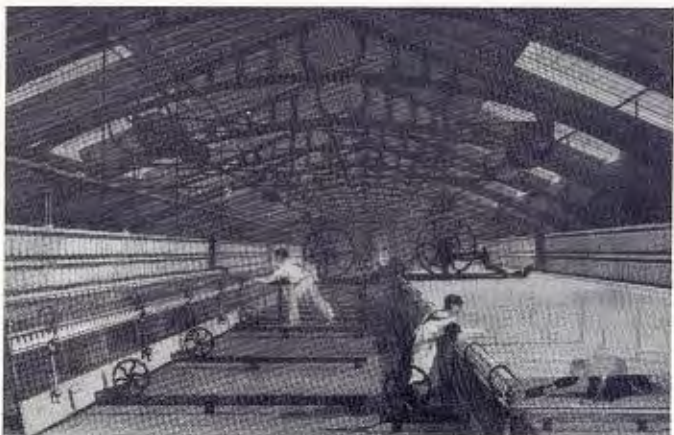
(British Travel Association)

WIMBORNE ABBEY, DORSET, where fines were levied because people had been buried in linen shrouds

the first water-propelled spinning frame. Eight years later Crompton invented the mule. A country parson, Lee, invented the knitting machine.

Britain has given freely of her genius and textile ingenuity, and but for this the world could not enjoy its present high standard of living.

We have now entered a new era. There has never been a more exciting time in textiles than the present, due to the



(The Parker Gallery)

MULE SPINNING. An early print of textile machinery in operation.

incidence of science on textiles and the introduction of synthetic fibres. We have all witnessed a revolution in dress. Women nowadays wear ten times as many dresses as their grandmothers—although, of course, wearing much less at any particular moment. Today over two million tons of synthetic fibres are made annually, and that is just twice the world usage of wool.

You may ask: why, with all the natural fibres in the world, do we need such quantities of synthetic materials? Well, there are several reasons. One is an economic reason. In this paradoxical world today man can grow trees; isolate cellulose (in the form of woodpulp); carry out a series of complicated chemical reactions (the viscose process); and with much mechanical ingenuity produce a regenerated cellulose fibre, similar to cotton chemically but costing half the present price.

This development of viscose had an unexpected stimulus—from women. It was the emancipation of women, the exhibition of more female leg, the desire to encase it in something

more attractive if less comfortable than the woollen stocking of the grandmother, which greatly helped the development of rayon.

The idea of making a synthetic fibre must have occurred to many a man who watched a spider or a silkworm. The origin of silk is lost in Chinese antiquity. Hsi Ling Shih, the wife of Huang Ti, the Yellow Emperor, cultivated the mulberry and taught her people to rear silkworms, and she is said also to have invented the loom, about 2700 B.C.

The silkworm devours mulberry leaves very voraciously, increasing rapidly in size and weight. When it has reached its limit, it stops eating and starts spinning its cocoon. The protein which the silkworm gets from the mulberry leaves are used to synthesise silk, which is extended by the silkworm as a thread made up of two filaments cemented together and which form the cocoon. The thread forming the cocoon is unwound, the gummy cement removed, and several such threads twisted (or "thrown") together to make a yarn strong enough to weave into cloth.

James I had the idea of starting a silk industry to bolster up the national revenue and had a plantation of mulberry trees near Constitution Hill. The royal experiment, however, failed because, we are told, James planted trees which grew purple mulberries, whereas it is on the leaves of the white mulberry that silkworms thrive.

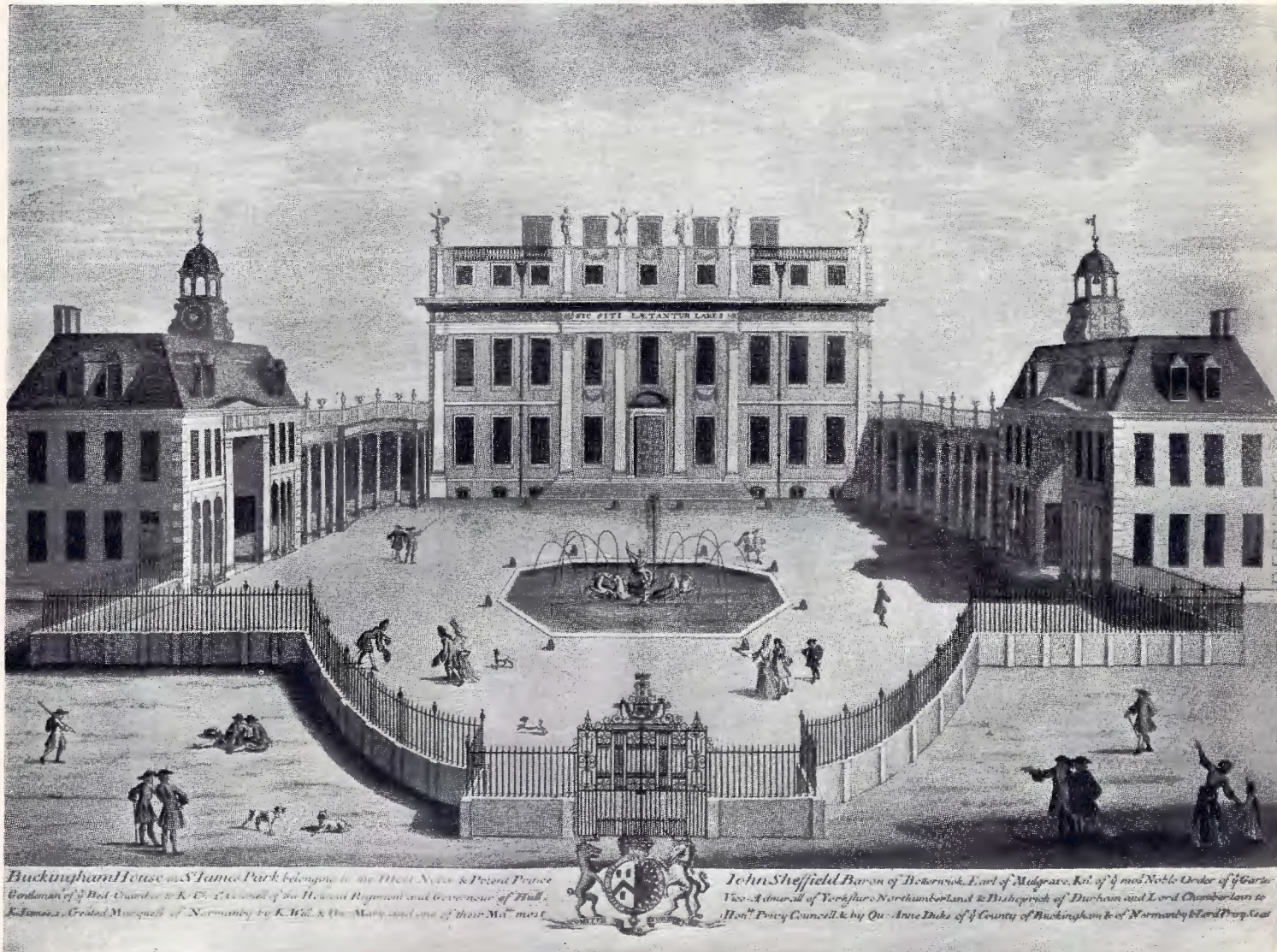
One unique property of silk is that the filament is very long (up to two miles), while all other natural filaments like cotton, wool, camelhair, mohair and so on are relatively short. Only synthetic fibres can be made of any desired length and in any fineness of diameter.

Earlier in this article we mentioned spiders. Spider silk has not so far been a commercial proposition. Réaumur calculated that 663,552 garden spiders would be required to produce 1 lb. of silk. However, stockings, gloves and bed-hangings have been manufactured from spider silk to demonstrate its possibilities. In Chester Cathedral there is a painting of the Madonna and Child on spider silk. Réaumur, like James I, failed in his experiments because he used the wrong species—of spider.

In America, of course, there are larger spiders. The giant *Nephila* has an output much greater than the European *Aranea*. Methods have been found of feeding these spiders with waste meat sources of food. Professor Wilder of the U.S. Army,



WORSTEAD, NORFOLK, the village in which Flemish weavers first made worsted cloth



BUCKINGHAM HOUSE—later rebuilt as Buckingham Palace—looked out on to mulberry gardens (now part of St. James's Park), where James I tried to start up a silkworm farm

who first experimented with the *Nephila* spider, computes that 5400 could produce sufficient for a lady's silk dress. In New Guinea the natives make a fishing net of spiders' silk suspended between curved bamboo poles, and this can be used to catch fish up to 1 lb. in weight. Using several thicknesses of web, fish up to 4 lb. in weight can be landed. There is also a large *Nephila* living in Java which builds webs big enough to snare small birds.

Perhaps the most remarkable feature of natural silk is its strength. The first rayons were not so strong as silk, but now they can be made with the strength of silk but without its elasticity. On the other hand, nylon has a strength greater than silk and a high elasticity. This latter property is necessary in garments and hosiery; for example, a stocking must be elastic to allow the foot to enter and for the stocking to regain its shape round the ankle. You are also familiar with the fact that silk garments do not crease easily.

Cotton and linen fabrics crease very easily, but cotton fabrics can now be rendered crease-resisting by treatment with resin. The most elastic of all textile fibres is wool. That is why woollen and worsted suits keep their shape. Of course, the

most important quality of wool as a clothing fabric is its warmth. Woollen garments are warm because the wool fibre is crimped and fabrics made from it immobilise air.

Nowadays the chemist can make fibres with some of the qualities of wool by starting with an animal protein, for example casein from milk, or from a vegetable protein such as the protein in groundnuts. These proteins can be regenerated in the form of fibres of almost any required diameter, and so are suitable for use in various branches of textiles—suitings, blankets, carpets and so on.

For the manufacture of apparel fabrics fine wool is necessary. Although the Continent of Europe still has the greatest sheep population, this wool is too coarse and too imperfect for apparel cloth. We have therefore to depend on Australia, New Zealand and South Africa for the finer wools suitable for dresses, suits and underwear.

The chemist has produced synthetic fibres which can be used like silk, cotton and wool—fibres which are similar in properties and sometimes even surpassing the natural fibre. New fabrics have become possible because of such new fibres and the textile scene is changing rapidly.

Information Notes

THE SULPHUR SHORTAGE: ITS CAUSE AND EFFECTS

Last month the sulphur shortage was described in these notes as likely to be more serious than any other in its effects on British industry. Of all raw material shortages it is perhaps the one most liable to lead to widespread changes in production affecting the pattern of employment. Here Mr. W. A. M. Edwards, Commercial Director of General Chemicals Division, explains how the world shortage of sulphur has come about.

BRITISH production of sulphuric acid had to be reduced by one-fifth from 8th January—an annual loss of nearly 400,000 tons of acid—and it is not certain that even this reduced output can be maintained after 31st March. This shortage is even more serious than the shortage of coal and has already had very adverse and far-reaching effects on a wide range of British industries. It is thought that most men and women in I.C.I. will want to know why this cut has had to be made, what effect it will have on British trade and on rearmament, and what steps our own Company are taking to alleviate the shortage of this essential basic chemical.

Sulphuric acid is made from a number of raw materials, all of which contain the essential element sulphur, namely:

- Iron pyrites*, imported from Spain and other countries;
- Spent oxide*, a by-product obtained in the manufacture of town's gas;
- Anhydrite*, a form of calcium sulphate which occurs in certain localities in this country and is mined at Billingham Works;
- Zinc sulphide* concentrates, imported for their zinc value;
- Sulphur*, imported from the United States.

Whereas in 1926, when I.C.I. was formed, British industry made 900,000 tons of acid and consumed less than 70,000 tons of sulphur (three-quarters of the output being from other raw materials), last year more than double that quantity of acid was produced. Nearly 60% of it was made by burning 360,000 tons of sulphur.

This increased dependence on sulphur has come about because, as compared with pyrites (still the next most important raw material), sulphur requires a simpler and cheaper plant which is easier and cleaner to operate. Furthermore, when additional acid production was needed during the last war, sulphur had the advantage that it required less shipping space than pyrites and supplies were available from the United States, which was naturally regarded as a stable source of supply.

At the beginning of the century Sicily was the world's largest producer of sulphur. Subsequently it was found possible to mine the large deposits which were known to exist in Texas and Louisiana, where it occurs disseminated in dome-shaped porous limestone formations. The sulphur is

recovered by an ingenious process perfected by Herman Frasch and known by his name. Very hot water is forced through steel-lined boreholes into the deposit, melting the sulphur, which collects in liquid form at the bottom of the well. The sulphur is then lifted by compressed air to ground level, where it is subsequently settled, filtered and solidified before shipment. Since the development of this process the United States have become the world's largest producer and exporter of sulphur, producing well over 90% of the total. Last year some five million tons were produced, of which approximately one-quarter was exported, Great Britain importing nearly half a million tons for acid manufacture and other purposes.

Geologists believe that the sulphur domes around the Gulf of Mexico are unique in the world. A number of additional domes have been discovered there recently. The whole area has been extensively surveyed, and it is thought improbable that any considerable new deposits will be found.

In the last few years world consumption has outstripped production and stocks above ground have dropped very considerably. In view of still increasing demands in the United States and the rapid diminution in stocks and proved reserves, the American Government has been obliged to take drastic action and has placed sulphur under allocation—in other words, sulphur is rationed both to the United States and overseas consumers. We may, however, be sure that, in view of the agreement between the American and British Governments regarding the allocation of scarce raw materials, Britain will get her fair share of available supplies.

British requirements of sulphur in 1951 were estimated at approximately 400,000 tons of sulphuric acid and 100,000 tons for other products. During the first quarter Britain will receive 82,000 tons, that is about two-thirds of our quarterly requirements. We do not yet know whether supplies will continue at this rate during the remainder of the year. While there will thus be a cut of about one-third in acid made from sulphur, the overall effect will not be quite so severe, since production from the other sulphur raw materials will not be affected; in fact the cut works out at 20% on total acid produced.

Most industries in this country will feel this cut directly or indirectly. Fertilizers (superphosphate and ammonium sulphate), using about half the total production, head the



Texas sulphur, solidified and ready for shipment

(Photo by courtesy of N.S.A.A.)

imposing list of consuming industries, which include artificial silk, dyestuffs, paints, metal pickling, oil refining and numerous miscellaneous trades, all of which will inevitably be affected to a greater or lesser degree. I.C.I. are already experiencing cuts in raw materials which involve the use of sulphuric acid, which is also used in the manufacture of many other chemicals, including saltcake and hydrochloric, formic and chlorsulphonic acids, shortages of which will affect another group of industries, including rubber, dyestuffs and pharmaceuticals. The demand for other I.C.I. products consumed by the affected industries will be reduced; for example, less caustic soda will be required for the manufacture of artificial silk.

The Board of Trade have placed sulphur and sulphuric acid under statutory control from 8th January, and these materials can now only be obtained under licence with certain unimportant exceptions.

To return to the sulphur shortage. It will take a considerable time to prove and develop the remaining deposits in the Southern States and Mexico. While steps are being taken with American aid to rehabilitate the Sicilian sulphur industry, at best it can make but a small contribution to solving the supply problem. Volcanic deposits in the Andes and Japan are expected to yield little.

Britain must therefore develop the use of the other raw materials enumerated above. Existing plants and projects now well advanced will shortly enable the whole of the British output of spent oxide to be absorbed, including existing large stocks. Any increase in the burning of zinc concentrates will be dependent on increased zinc production and cannot make much difference to the overall acid position. Pyrites and anhydrite are the other major possibilities, and a small contribution may be expected from sulphur recovered from the new British oil refineries.

Since the early 1930's I.C.I. has made sulphuric acid in a big way at Billingham from locally mined anhydrite, with cement as a co-product. The plant, however, is necessarily

complicated and the capital required is much higher than that required for a pyrites plant, which again is more costly than a sulphur plant. Until very recently, when the prices of sulphur and pyrites began to rise and the Board of Trade permitted a corresponding increase in the controlled prices at which acid may be sold (price control has been continuous since 1940), an anhydrite plant built at today's prices would not have been an economic proposition. Anhydrite, however, has the great advantage over pyrites of being an indigenous material in plentiful supply, and I.C.I. is now discussing with certain other makers and large users of sulphuric acid the possibility of erecting further anhydrite acid capacity in this country.

This shortage of sulphur was not unforeseen, although its severity could not and still cannot be forecast. At certain of the Company's works where it was feasible to do so, plans were made many months ago for conversion from sulphur to pyrites or spent oxide burning. These conversions are now nearing completion and will substantially reduce I.C.I.'s sulphur requirements.

It is worth while noting the magnitude of the problem before the British acid industry. Plans must be made on the assumption that little American sulphur will be available to Britain for acid manufacture in five to ten years' time. Having regard to the steady increase in our demand for acid, to the need for replacing obsolete plants anyway and to the probable loss of all the acid now made from sulphur, it will be necessary to convert existing plants and to build new plants to burn pyrites and anhydrite to the extent of at least one million tons annual capacity. This figure makes no allowance for any possible savings which may be effected in acid usage, for example by using calcium sulphate for the manufacture of ammonium sulphate where it is now made from sulphuric acid, or by making for use as a fertilizer nitrophosphates from nitric acid instead of superphosphate from sulphuric acid. I.C.I. will undoubtedly play a large part in such potential developments, in addition to contributing to the further exploitation of the anhydrite acid process.

ANCESTORS OF AN INDUSTRY

The series of I.C.I. advertisements telling the story of famous names in British scientific achievement has now been reproduced in a book called *Ancestors of an Industry*, published by The Kynoch Press for private circulation. Professor W. Wardlaw of London University contributes the following review.

John Adams, the first ambassador from U.S.A. to this country, began a memorable address with these words:

"Chymists! Pursue your experiments with indefatigable ardour and perseverance. Give us the best possible Bread, Butter and Cheese, Wine, Beer and Cider, Houses, Ships and Steamboats, Gardens, Orchards, Fields, not to mention clothiers and cooks. If your investigations lead accidentally to any deep discovery, rejoice and say Eureka."



Robert of Chester

This utilitarian attitude has a long history. The alchemy which fathered our science was a very utilitarian pursuit. Its objects included the transmutation of base metals into gold and the discovery of the elixir of life by which age and death might be defeated. But the history of the chemical industry is also the story of scientific investigators, working with no practical end in view, who chose a particular trail to satisfy their own curiosity. From the highly specialised researches new understanding of fundamental phenomena emerged and, as a consequence, new ideas. In due course new products were marketed and new chemical industries created.

Every intelligent man and woman should know something about the rise of an industry which contributes so much to their well-being and happiness. However, the industrialist who has something to say about his industry must first command the attention of his audience. There are many ways of doing this. A distinguished British chemist once focused considerable attention on chemistry and the chemical industry by a witty after-dinner speech. He painted a vivid word-picture of the modern girl in which he maintained that from the crown of her head, adorned with an elegant coiffure, to the tips of her toes, encased in beautiful nylons, she was indebted to the resources of the chemical industry.

I.C.I. have approached the problem in a special way. During 1948 and 1949 a series of announcements under the title "Ancestors of an Industry" appeared in the public press telling the story of British scientific achievements from Robert of Chester, who brought the science of chemistry to Western Europe eight hundred years ago, up through the centuries to Lord Rutherford, one of the great pioneers in the field of atomic physics. Attractively written and illustrated, these biographical sketches achieved their purpose of impressing readers with the fact that the British contribution to the forward march of science is second to none. Obviously the names selected for consideration were but a sample from a vast team of scientists whose contributions to pure and applied chemistry provide such a fascinating picture of discoveries, inventions and industrial developments. What a galaxy of talent! The selection could not be bettered.

It is gratifying to know that greater permanence is to be given to these I.C.I. announcements by the preparation of a volume entitled *Ancestors of an Industry*. With the skilled assistance of the editor of *Endeavour*, a book has been made available which will convey to the reader something of the spirit, the purpose and the accomplishment of scientific research. Seldom does one find the story of the ancestors of any great industry presented with such charm and lucidity.

DO YOU KNOW?

- I. Which is (i) Furthest North? (ii) Furthest South?
 - (a) Plastics Division, Welwyn Garden City. (b) Paints Division, Stowmarket. (c) Metals Division, Landore, South Wales.
- II. Metals Division do *not* make one of the following:
 - (a) Zipp fasteners. (b) Fog signals. (c) Razor blades. (d) Fuse wire. (e) Porcelain insulators.
- III. I.C.I. Salt Division runs the only working salt mine in Britain. The salt it produces is:
 - (a) Pale grey. (b) Brown. (c) White. (d) Yellow. (e) Dark grey.
- IV. Nobel Division at Ardeer is in a part of the country associated with:
 - (a) Shelley. (b) McConigle. (c) Burns. (d) Sir Walter Scott. (e) Neil Gunn.
- V. Plastic raincoats are usually made of one of these:
 - (a) Polyvinyl chloride. (b) Urea formaldehyde. (c) 'Perspex.' (d) 'Crinothene.' (e) 'Ardil.'
- VI. I.C.I. was formed in: 1920, 1922, 1924, 1926.
- VII. Here is a list of products and places; can you pair them off correctly?
 - (1) Soda ash. (2) Sulphuric acid. (3) Copper tube. (4) 'Perspex.' (5) Aluminium sheet. (6) Salt.
 - (a) Wilton. (b) Winnington. (c) Winsford. (d) Waunarlwydd. (e) Widnes. (f) Witton.

THE WILTON WORKS SET-UP

By G. M. Power (Wilton Works)

It has been recently announced by the I.C.I. Main Board that the Company intends to proceed with the large-scale manufacture at Wilton of 'Terylene,' the new synthetic textile fibre. The production of 'Terylene' will involve the activities of three I.C.I. Divisions at Wilton: Billingham Division will produce essential raw materials, Dyestuffs Division will synthesise 'Terylene' polymer, and Plastics Division will spin 'Terylene' fibres. Wilton will have considerable extensions to make to its services distribution system and its normal contribution to civil design and plant erection.

These three Divisions are already engaged in manufacturing activities at Wilton Works. Billingham Division have their oil-cracking plant, and ethylene oxide, glycol and formaldehyde plants; Dyestuffs Division have plants for the production of 'Lissapol N' and α -naphthylamine; and Plastics Division are producing 'Perspex' and moulding powders. In addition to these, Alkali Division are producing polythene, and General Chemicals Division are to manufacture chlorine and caustic soda at Wilton Works.

All five Divisions—and in the future there may be more—will be technically and commercially responsible for their respective manufactures, and the Wilton Works organisation will play no part in these respects. Wilton Works, however, will supply the services required for operation of these plants, that is, the steam, water, gas, electricity, etc., consumed by the Division plants, and the general factory site and services such as road and rail transport, workshops, offices, canteens, etc.

When these aspects are explained to the visitor to Wilton Works, he frequently exclaims "Ah, I see. Just like a trading estate." Well, it is true that there are superficial similarities between the organisation of Wilton Works and that of a trading estate. In the same way there are superficial similarities between a family household and a boarding-house. In the boarding-house the boarder is supplied with food and shelter and makes the best of general conditions. He has no part in

the organisation of the house, nor any means of obtaining special consideration of his particular requirements. He is not concerned about the problems which beset the manager, nor with the financial success of the venture. In fact, the boarding-house represents a group of people getting along as best they can under circumstances which they have little opportunity to control.

The organisation of Wilton Works has been designed to overcome such difficulties by joint consultation between all those concerned in its development and success, just as these matters are dealt with in a well-run family. Only in this way is it possible to use fully the vast experience in factory design and operation which exists within the Company, and to ensure Wilton Works being a factory which is clean, pleasant, smooth-running and efficient.

Apart from the I.C.I. Main Board, which has the development of Wilton Works very much in mind, this collaboration starts at the highest level in the Wilton Council. The Council meets monthly, and has the status of a Division board. Its members are the chairman of the Wilton Council, senior members of the Wilton Works organisation, and the chairmen of the Alkali, Billingham, Dyestuffs, General Chemicals, Nobel and Plastics Divisions' boards. The Council determines the general policy, and resolves major problems concerning the development and layout of the works, the progress of design and construction, the control of expenditure, the provision of services, negotiations with local authorities and government regional organisations, labour administration and so on.

The Wilton Council, of course, deals only with the broader aspects of these problems. For their detailed application, and for the day-to-day conduct of the business of the site as a whole, there is a Wilton central organisation consisting of the Technical, Works, Engineering, Accounting, Supply and Transport, Personnel and Secretarial Departments. The heads of these departments under the chairman of the Wilton



Piccadilly Circus, the centre of Wilton Works

Council form the Wilton Executive, which body implements the decisions and carries out the policy of the Wilton Council and gives preparatory consideration to many of the problems handled by it. The departments of the Wilton central organisation are in frequent contact with the corresponding departments in the Divisions and in Head Office.

It is appropriate to mention here that the Main Board has laid down that Wilton Works is to be considered as a possible site for any major extension of a Division's production or any new manufacture. Such projects are, at the earliest practicable stage, considered jointly and objectively by the Divisions and Wilton, and their siting at Wilton or elsewhere is decided on the merits of each individual case and in the interests of the Company as a whole. This is an important example of the manner in which collaboration between Wilton and Division departments leads to recommendations which are considered by the Wilton Executive, the Wilton Council and the Division board, and finally by the I.C.I. Main Board.

Joint consideration of the common problems concerning administration of the factory, such as labour, services supply, priorities, co-ordination of job appraisalment and incentive bonus working and so on, is the function of the Wilton Works Managers' Committee. This committee meets monthly under the chairmanship of the Wilton general works manager, and all Division works managers or senior plant managers at Wilton are members of the committee, together with Wilton officials concerned with the matters discussed.

The works councils are also organised with the idea that Wilton works is one factory rather than a collection of Division plants. Each Division plant, or group of plants, of sufficient size will have their own works councils. Wilton Services and Construction Sections also has its works council. Wilton is a single unit in the Company's Works Council Scheme, and each works council at Wilton will elect delegates to the Wilton Site Council, which in turn will elect to the Central Council representatives for Wilton Works as a whole.

A VISIT TO YUGOSLAVIA

Mr. M. D. Munro of Chemical Export Sales visited Yugoslavia not long ago on Company business. He spent two weeks behind the Iron Curtain and here tells his impressions of communist Yugoslavia.

My journey to Yugoslavia may be said to have begun at Milan, where I boarded the Simplon Orient Express for Zagreb. By the time we reached the last stop in Italy most of the passengers had left the train, which by then was reduced to four coaches, all for the most part empty. At the frontier the electric locomotive was replaced by a rather dilapidated Yugoslav steam engine, and from a building at the side of the track a host of Yugoslav officials descended on the train to discharge their various duties. Then a number of typical Yugoslav passenger coaches, with no lighting and window glass missing here and there, were coupled up. After about a forty-minute stay the re-formed S.O.E. proceeded on its journey towards the Orient.

When the train halted at Ljubljana, the platforms were crowded. The mob, mostly peasants, surged forward to board the train; and although more passenger coaches were added there was not sufficient room for all would-be travellers. This scramble for a place on the train happened at every stop, and many people were left behind simply because it was physically impossible to cram in any more bodies. It was necessary to

muster the sleeping-car passengers to hold the doors of the coach against the surging mob.

The two big towns I visited were Zagreb, capital of Croatia, and Belgrade, capital of Serbia and Yugoslavia. In both these towns the streets and cafés were crowded in the evenings with young people and soldiers. The middle and working classes were conspicuous by their absence. It seems their work starts at 7 o'clock in the morning and finishes at 2 o'clock in the afternoon; but with the present high cost of living this respite from official employment can be enjoyed by few. The married man with a family or those with dependent relatives must seek unofficial secondary employment from 3 p.m. onwards in order to earn sufficient additional money to balance the family budget.

The state is doing something to counteract high living costs by rationing essentials, but the quantities allocated are very small and often not available, so that additional purchases have to be made on the free market, where prices are fantastically high. However, there are canteens for state employees where midday and evening meals can be had for 1200 dinars per month per head, or say £9.



This ceaseless struggle for funds is telling on the work-people of the towns, with the result that they are too tired and worried to give of their best. Luckily, Yugoslavia is predominantly an agricultural country. Before the war the balance between manpower and employment was maintained by emigration, but now that nobody is allowed to leave the country it is hoped that the factories will absorb the surplus.

Until the recent official decrees which in effect tightened the belt one notch more, there was a privileged class of high-ranking civil servants and heads of state concerns who, while they received only slightly higher salaries than the workers—8000 dinars (£70) per month as opposed to 5000–6000 (£45 to £50)—were accorded more rationed goods from privileged shops at reduced prices, thereby accentuating the difference between their class and the workers. Now, however, “functionnaires” get few extra luxuries. They live in villas in a rather exclusive suburb of Belgrade which was built in between the two wars for the élite. From here they go to and from Belgrade in large cars of recent American make.

THE IRISH IN ENGLAND

By Kevin FitzGerald
(Central Agricultural Control)

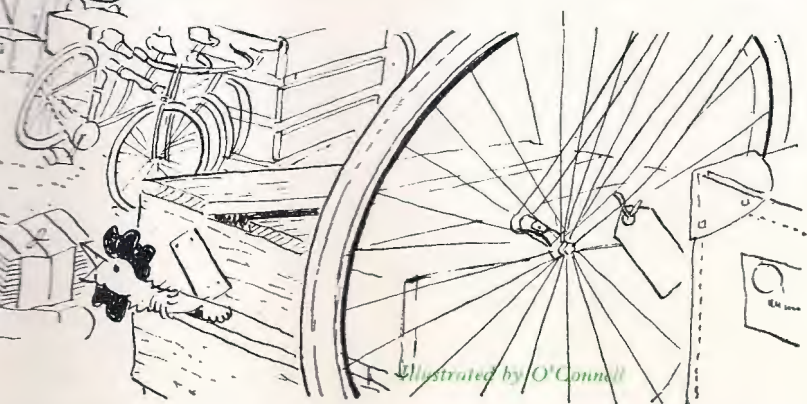
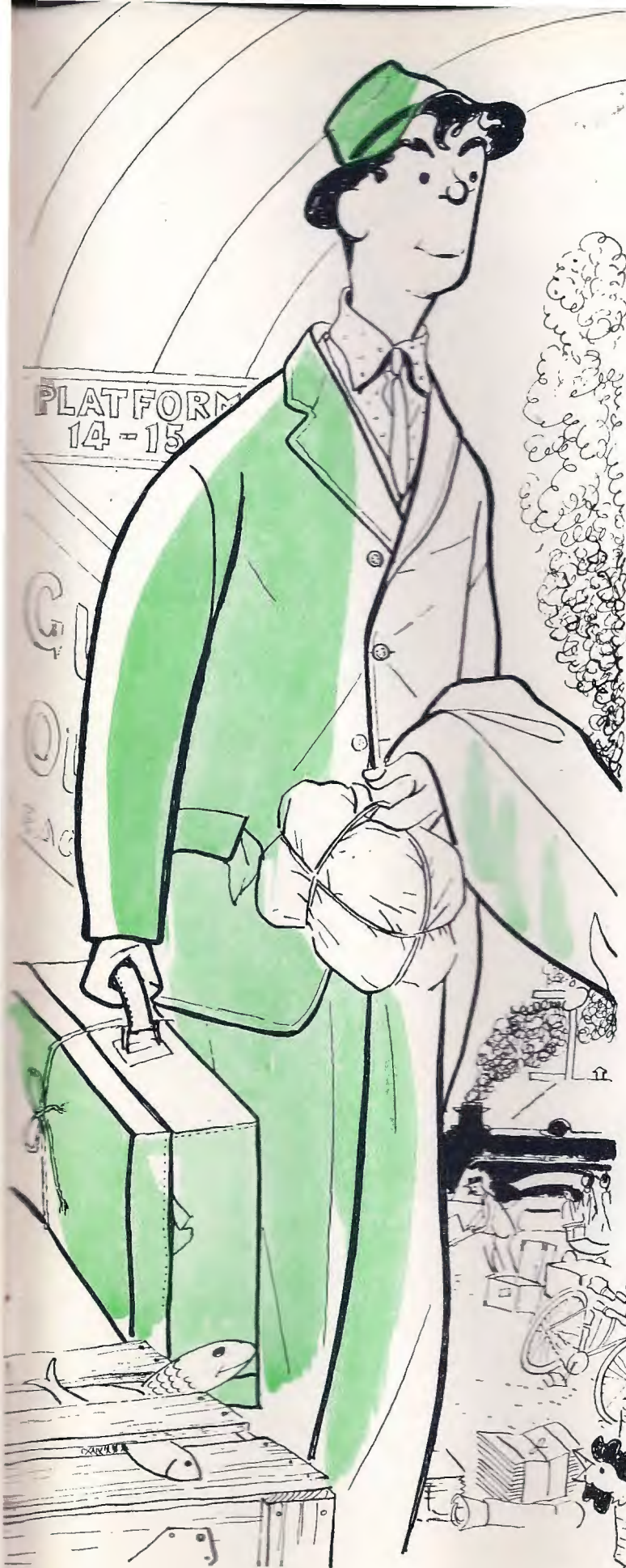
EVERY Irishman knows that the streets of London are paved with gold. He knows, too, that sixty miles away by sea there is a haven of rest where the meat may be in short supply and the drinks expensive but where the amount of work he gets through daily on his father's land before dinner would be considered excessive if spread over a week. He is told that payment will be given for this work and, at the earliest possible moment, he buys a third-class through ticket from Ballaghaderreen to Euston and, clutching a papier mâché suitcase done up with a bit of binder twine, sets forth for El Dorado.

You can see and listen to him every night in the tea buffet at Holyhead as he steps ashore. He is about six feet tall and twenty years of age, and he has had (who blames him?) two or three bottles of stout on the boat to fortify him against the terrors of his unknown plunge into barbarism.

"Would you ever be letting me have a cup of tay, ma'am," he says, "if you please."

He gets at this stage his first shock. "Stand in the queue over there, can't you!" is his first greeting to the Land of Promise. But he takes it well. "I'm sorry, ma'am, sure I am," says he; "for I didn't know that they do be regulating the sale of tay over here." And he smiles. He'll get his tea all right, and well before the Englishman treading his native heath and banging the counter in a vain attempt to produce an antidote to a full-blooded Mayo smile. There isn't one. Not if the lady behind the bar is under fifty, and usually not even then.

You will see him in the train. He is very tired now and a bit frightened. If he falls asleep he will collapse across the compartment, because he is not used to travel and misses his bed



Illustrated by O'Connell

in the loft at home which has a ledge to hold him against the wall and the bottom of the thatch. Don't feel too sorry for him. He's all right. That little parcel which he still holds tightly in his hand is full of butter and bacon for the sister, the brother, or the aunt to whom he is going.

You will hear his voice at Euston. "Could you ever be telling me, is this London?" Looking at the mass of piled-up crates, bicycles, boxes of fish and heaps of newspapers you are not quite sure yourself, but you say "Yes" and are at once involved. "Would there be any way of getting to me aunt at Islington?" You look away murmuring something about "Take a tube over there and down those stairs to the Angel" and leave him wondering what ailed him to ask a Spirit the way.

But the Irishman has come to England and to no mean heritage. He will get to Islington all right, scrape the blue-black stubble off his face, put on the spare shirt he has brought with him, eat a good breakfast unless it's Friday, and have a job before dark.

How is it done? At home he will do all the work there is to do in a kind of dreamy haze. He will be shy and slow of speech. Each winter night he will sit by the fire in his mother's house, or with a neighbour, and play at spoil-five. Each summer evening he will lie or stand with a group of other young men (never with girls) at the nearest cross-road. Sometimes he will listen while old men "sit upon the ground and tell sad stories of the death of kings"; sometimes he will dance the set and square dances of the Irish to the music of the fiddle and a triangle, and sometimes he will set off after Sunday Mass to a big hurling match. But mostly he will be sad, mostly he will be longing to get away, to follow the mysterious scattering urge of the Irish which has populated the ends of the earth. For his country is too small to hold

*His country is too small to hold him
... the farm is too small to carry his
parents and his brothers and sisters*



him, the farm is too small to carry his parents and his eight brothers and sisters, and the village is too small, if there even be a village where he lives, for him to have any hopes of courting and marrying a woman of his own. Above all he lives under a barometric pressure represented by a mean average rainfall of forty inches for all Ireland. That in itself makes all men sad while it is growing the grass.

He used to go to America, but that country now contains over ten millions of him in the first and second generations, and the doors are closed. He still goes to Australia and Canada, but they are such a long way from Ireland. From England, he thinks, he can always get home. But he seldom does.

For in England a sea change comes over him. In the dry, clear air of the United Kingdom (so unappreciated by the native) away go depression and blackness of heart and in come gaiety and a capacity for sustained physical labour that would frighten an ox. Almost every man in England doing spade and shovel work is an Irishman, especially on deep excavated building sites. But he doesn't do it for long. He will never be the equal of the English craftworker—his temperament will see to that—but by and large he carries with him always one of the conditions for success anywhere—he gets on with people. Oh, yes; he is quarrelsome and argumentative,



It's the way his tonsils are put in. Women appear to like that sort of voice ...

and he will fight—and like it—if occasion offers. But most people like Paddy or Michael or Big Joe in spite of themselves and in spite of a feeling that they cannot really be true.

It is the Irish voice which makes the Englishman suspicious. No Englishman likes a man in his heart if that man speaks in what he calls a "tone of voice," and an Irishman cannot help speaking in just that. It's the way his tonsils are put in. Women appear to like that sort of voice, and the Irishman has to combat jealousy over the ladies long before he has had a chance to settle down. And he cannot help that either. Most women tend to prefer the big, tired workman who stands up for them in the tube with his "Would you ever be taking me seat now, ma'am" to the much better, more honest, clearer-thinking, essentially kindlier Englishman who from principle—things being what they are—now keeps his head buried in the evening paper.

So the Irishman gets his job and goes on the bottle with his first week's pay (just as you did), and he settles down to become a citizen. This is hard for him.

No other man in the world has the respect for law shown by the English. And there are few with so little as your true Irishman. He finds it difficult to stand patiently in queues, not to do this and not to do that. To him "Keep off the Grass" has all the attractions of a cordial invitation. He *likes* obstructing the police in the execution of their duty.

But he learns it all the hard way. He gets thrown out of a pub by a little man half his weight but with twice his determination, he runs into that terrifying manifestation of Imperial Power, the angry Englishwoman; he may even hear an English magistrate speaking that terrible sentence which begins "I do not propose to tolerate young Irish hooligans coming over here and..." He learns what only Englishmen really know—how to take a joke against himself without going insane.

He learns that while he comes from a country where you can do what you like if you don't talk about it he is now living in a country where you can say what you like if you don't attempt to do it. This is a difficult lesson.

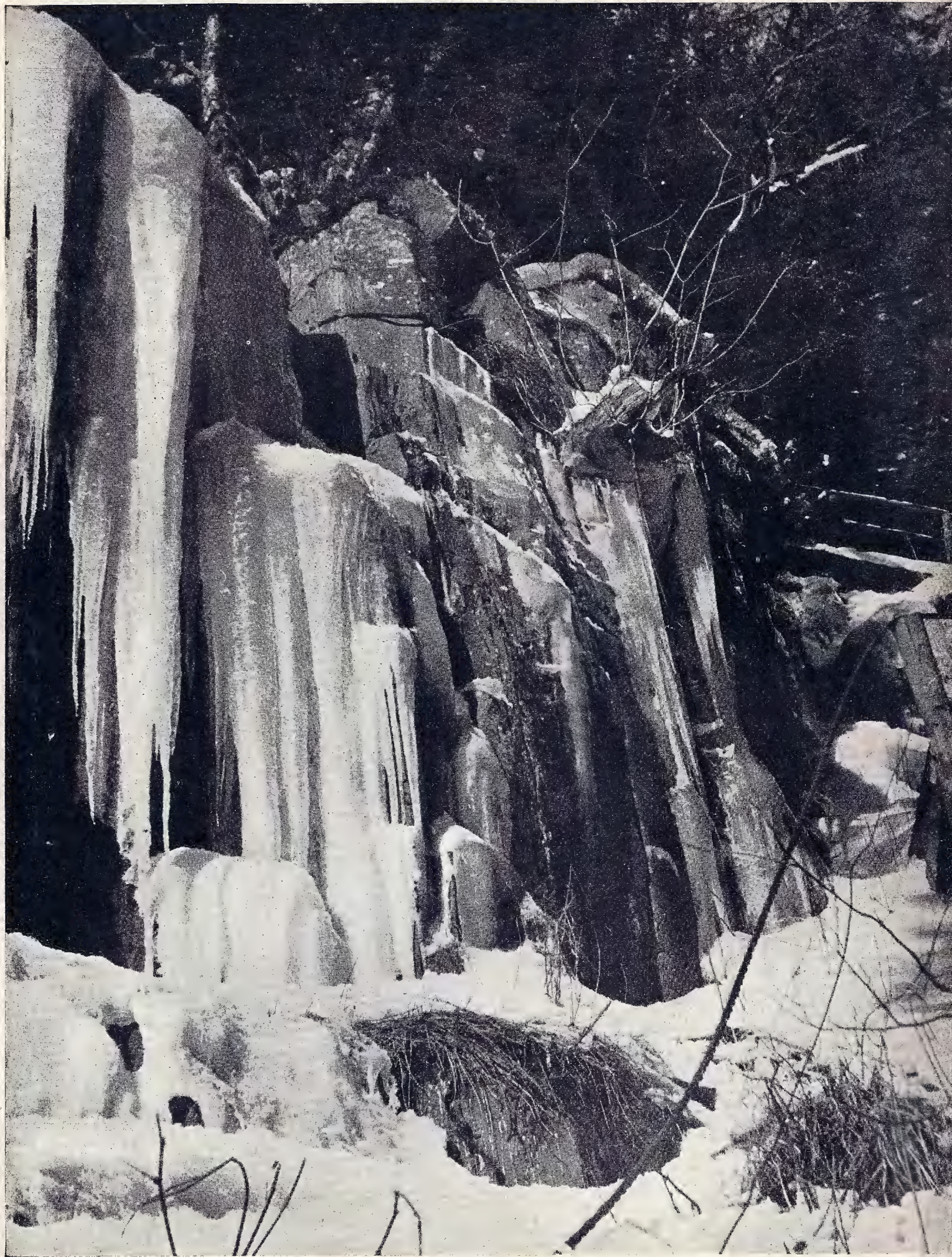
He learns that when he pleads his cause with fire and passion everybody will laugh and say "Don't mind Paddy; he's only cross about something," and that when he moderates his tone and his voice and relies on logic everybody will laugh just the same and say "Don't mind Paddy; he's only sulking about something." He learns that the English are

a truly incomprehensible people who will give him a vote, a passport, a union card and, if he likes to try, a seat on the borough council or even in Parliament. He settles down.

Behold him, if he is the sort that really means to get on, in ten years' time. He will not have made a fortune. Don't be afraid of that. He is standing in a queue, or on a tube platform, in a decent plain hat and coat reading his paper. A friend approaches. "Hello, Paddy, how are things?" "Bad," he replies. "Coming to the meeting?" "Can't," he says; "got to take the missus to the pictures." He fights his way on to the bus or train and waits for the first vacant seat. Once in it his paper comes up. He will sit tight if it kills him. But the old Adam cannot be killed. Up he gets and, his mind on the little house he has bought beyond Ilford, he has forgotten that he translates from a foreign tongue. "Would you ever be taking me seat, ma'am," he says. And he smiles.



But he learns it all the hard way



A frozen waterfall at High Force, Teesdale

By A. W. Caunt (Billingham Division)